

CCD-V90E

SERVICE MANUAL



*AEP Model
UK Model
Australian Model
E Model*

Handycam PRO Video 8

SPECIFICATIONS

System

Video recording system

Rotary two heads,
Helical scanning FM system

Audio recording system

Rotary head, FM system

Video signal

PAL colour, CCIR standards

Usable cassette

8 mm video format cassette

Tape speed

SP: Approx. 20.051 mm/sec.
LP: Approx. 10.058 mm/sec.

Recording or playback time

SP: 90 min. (P5-90)
LP: 180 min. (P5-90)

Fast forward time

Approx. 6 min. 15 sec. (P5-90)

Image device

CCD (Charge Coupled Device)

Viewfinder

Electric viewfinder
(0.7" black and white)

Lens

Combined 6 × power zoom
lens
f = 12-72 mm, F1.6 with macro
Filter diameter: 46 mm

Auto focus system

TCL

Colour temperature

Preset values
OUTDOOR: 5,800 K
INDOOR: 3,200 K
Auto: From the light at a
tungsten lamp to the light
on a slightly overcast day.

Minimum illumination 7 lux

Illumination range 7 lux-100,000 lux
(0.46-9,294 footcandles)

Recommended illumination

More than 100 lux
(9.3 footcandles)

Aperture correction

Automatic, manual (variable)

Input and output connector

Output jacks

Video output: phono
1 Vp-p, 75 ohms
unbalanced, sync negative

Audio output: phono
-10 dBs, at output
impedance less than 2.2
kilohms

Earphone jack

Minijack, 8-ohm impedance

Remote connector

5-pin connector

MIC jack

Minijack, -66 dBs, low
impedance
With 2.5-3 V DC output,
impedance 6.8 kilohms

Microphone power output jack

Special minijack, 5 V DC

Display in the viewfinder

Mode indication

REC/STBY/OUTDOOR/

INDOOR/shutter speed

Caution indication

BATTERY/DEW/TAPE END/
CAUTION/CASSETTE

Date or time indication

Small 8 characters
Date: From Jan. 1, 1987 to
Dec. 31, 2015
Time: 24 hour cycle
Crystal lock
Approx. 2 years using the
CR2025 lithium battery

Clock

Memory back-up

— Continued on next Page —



VIDEO

8 VIDEO CAMERA RECORDER
SONY®

General

Power requirements	6 V DC
Power consumption	6.3W (camera recording) including the viewfinder Horizontally, vertically
Installation	
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Dimensions	Approx. 99 × 136 × 330 mm (w/h/d) (4 × 5 $\frac{3}{8}$ × 13 in.)
Weight	Approx. 1.1 kg (2 lb 7 oz) excluding the battery and cassette Approx. 1.3 kg (2 lb 14 oz) including the NP-55 battery and cassette
Microphone	Electret condenser microphone, omni-directional monaural type

Accessories supplied

Lithium battery (1)
Lens cap (1)

Optional accessories

Carrying case LCH-V50
Battery pack NP-55, NP-77, NP-22, NP-4000
AC power adaptor AC-V55

Car battery cord DCC-16AE

DC pack DCP-55

Battery adaptor NPA-22

Connecting cable VMC-910MS/920MS (2 phono to 3
phono), VMC-710M/720M (2 phono to 2 phono),
VMC-262M (2 phono to 6-pin), VMC-2104M (4
phono to 21-pin)

Microphone ECM-Z200, ECM-K120

Wireless remote control kit RM-151KA

External microphone shoe SAD-100

Remote Commander RM-94

Viewfinder adaptor VFA-50

Close-up lens kit VF-150K

Teleconversion lens VCL-1546A

Wide-conversion lens VCL-0746A

Filter kit VF-46M

Tripod VCT-400

Design and specifications are subject to change
without notice.

Your dealer may not handle some of the above
listed optional accessories. Please ask the dealer for
detailed information about the optional accessories
available in your country.

Note

This appliance conforms with EEC Directives 76/889
and 82/499 regarding interference suppression.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

- 1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.**
- 2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.**
- 3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.**
- 4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.**
- 5. Check the B+ voltage to see it is at the values specified.**

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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SECTION 1 GENERAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

For details on the use of each control, refer to the pages indicated in the circle.

Video camera section

A-1

1 Viewfinder

The picture being recorded or played back can be monitored in monochrome through this viewfinder. Data such as the function mode, caution indicators, date, time, are also displayed on the viewfinder screen.

2 Viewfinder lens adjustment lever

Adjust to your eyesight to assure good focus. Be sure to adjust this lever when shooting for the first time.

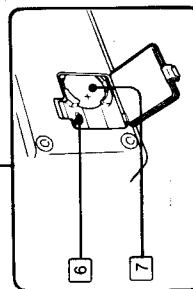
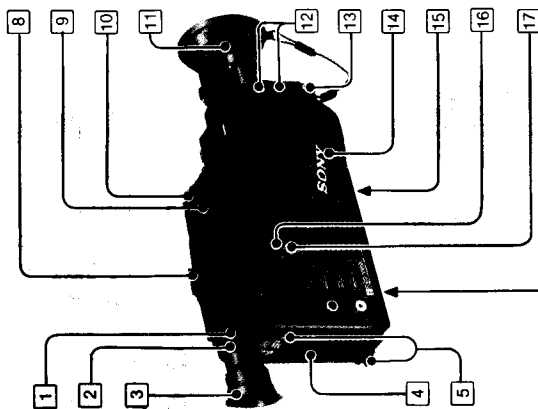
3 Eyecup

4 Battery mounting surface

5 Hooks for shoulder strap

6 Recording mode/EDIT switch

Switch it depending on the operating mode.



7 Lithium battery compartment

8 Accessory shoe

Attach an optional external microphone, video light, etc.

9 Power zoom button

Press for smooth power zooming between wide-angle (W) and telephoto (T) positions.

10 White balance sensor

This is the sensor for the auto white balance adjustment. Be careful not to cover it.

11 Built-in microphone

12 MIC jack and DC OUT (microphone power output) jack

Connect an external microphone. The MIC jack accepts Sony "plug-in-power" microphones and supplies power to them.

13 Earphone jack (mini)

14 Grip strap

15 Tripod receptacle

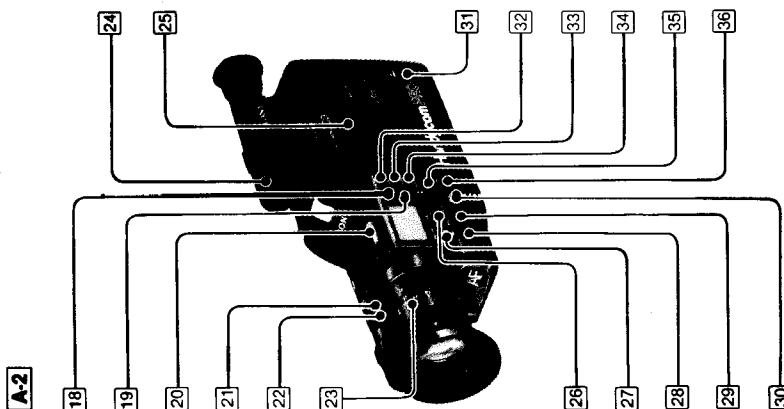
Attach an optional tripod.

16 STANDBY switch

Before recording, slide this switch up.

17 START/STOP button

Press to start or stop camera recording.



A-2

18 DATA SET button

Used to set the date and time.

19 ADJUST button

Used to set the date and time.

20 EJECT (cassette eject) switch

21 Macro set button

Keep in this button depressed, move the manual zoom lever within the MACRO range for close-ups.

22 Manual zoom lever

23 Focus ring

For manual focusing, turn this ring to focus while looking through the viewfinder. This ring will be turned automatically during auto focusing.

24 Camera recording/battery lamp

Lights during camera recording. It blinks when the battery is exhausted.

25 Cassette compartment

26 IRIS control

Normally set to the center position (green mark).

27 SHUTTER SPEED button

Used to select the shutter speed.

28 AUTO LOCK switch

Normally set to the left AUTO LOCK position (green mark).

29 FOCUS button

Used for manual focusing.

30 WHITE BAL (white balance) button

Used for manual balance adjustment.

31 BATT (battery eject) switch

32 ZERO MEM (zero memory) button

Used to memorize the counter zero point.

33 RESET button

Press to reset the counter to zero.

34 SELECT button

Select the counter, date or time display.

35 EDIT/SEARCH button

36 (recording review) button

1-2. POWER SOURCES

SELECTION OF POWER SOURCES

This manual shows the operations on one of the following power sources. For operation on other power sources, see the instruction manual furnished with the equipment to be used.

Place	Power source	Accessory to be used
	Indoors	AC power adaptor AC-V33 or AC-V55 (page 7)
Outdoors	Battery pack	Battery pack NP-55 or NP-77 (page 7)
In the car	12 V or 24 V car battery	AC power adaptor AC-V55 and car battery cord DCC-16AE (page 7)

Notes on power source

- Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted cassette tape. If this is done by accident, supply the power again immediately and turn on the power switch.
- If a power source is disconnected or the CHARGE button on the AC power adaptor is pressed in rewind mode, the  indication may blink in the display window and the tape may not run. In this case, remove the cassette and insert it again.
- Be careful not to let any metal object touched on the metal part on the battery pack or AC power adaptor. When the battery pack is not be used, keep it in its case.

Video cassette recorder section and connectors

A-3

1 POWER switch

CAMERA: For camera recording.

PLAYER: For tape playback and tape editing.

OFF: To turn off the power.

2 Tape transport buttons

◀◀ FF (fast-forward), ▶ (playback), ▶▶ REW (rewind), ◀◀ (frame-by-frame/slow playback), ■ (stop), ■ (pause)

A-4

3 REMOTE connector (5-pin)

Connect an optional Remote Commander, editing controller, etc.

4 AUDIO OUT/VIDEO OUT jacks (phono)

5 RFU DC OUT jack (special mini) Connect the RFU-89E/AS RFU adaptor, etc.

A-5

Display window

DATE mode indicator

TIME mode indicator

Lights steadily when no cassette is inserted. Blinks when the tape reaches its end during camera recording or when a recording is started with a cassette with its safety tab out inserted.

Blinks when the battery is weak.

Blinks when moisture has condensed inside the unit.

Displayed when the ZERO MEM button is pressed.

COUNTER mode indicator

Blinks when the video heads have been contaminated.

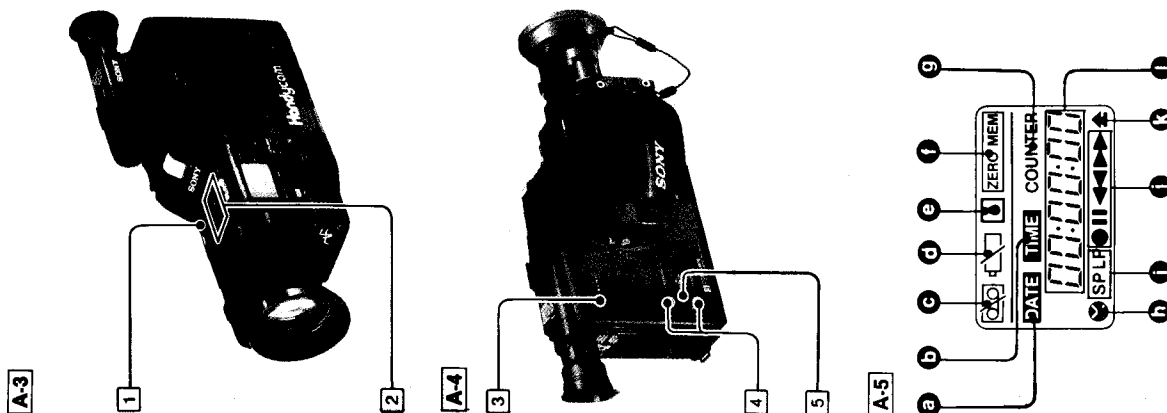
Tape speed indicator

Tape operation mode indicators

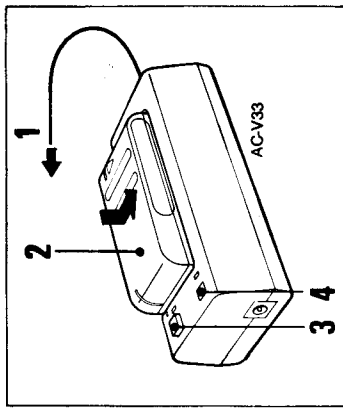
(recording), ■ (pause), ◀◀ (fast-forward), ▶▶ (rewind), ◀ (playback)

Blinks when moisture has condensed on the tape, when the tape reaches its end during camera recording, etc. to indicate that the cassette should be removed.

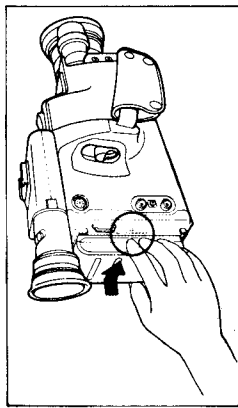
Tape counter, date or time indication



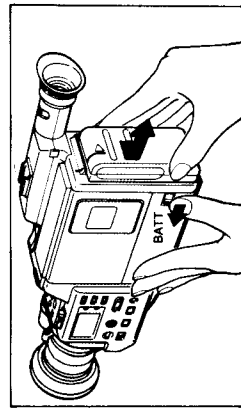
B-1



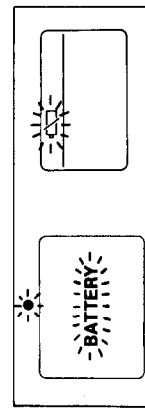
B-2



B-3



B-4



BATTERY PACK—NP-55 OR NP-77

How to charge [B-1]

Use the AC-V33 AC power adaptor. The charging time is about 1 hour for an NP-55 battery pack, or about 2 hours for an NP-77 battery pack.

- 1 Connect the AC-V33 to a wall outlet.
- 2 Attach the battery pack to the AC-V33. Align the grooves on the battery pack with those on the AC-V33, and while pressing the battery pack, slide it as illustrated.
- 3 Press the POWER button.
- 4 Press the CHARGE button.

To attach the battery pack to the video camera recorder [B-2]

Align the right side of battery pack with the white line on the recorder, and while pressing the battery pack, slide it to the right. Make sure that the battery is fitted completely to the mounting surface. Imperfect fit may damage the projections on the recorder.

To remove the battery pack [B-3]

While pressing the BATT switch in the arrow direction, slide and pull out the battery pack as illustrated.

Battery life

A fully-charged NP-55 battery pack provides approximately 40 minutes of continuous camera recording, and an NP-77 provides approximately 80 minutes of continuous camera recording.

NOTES

- The video camera recorder consumes power even in the recording pause mode. Therefore, for every hour's worth of tape you shoot, plan to use 2 to 3 hours' worth of battery power.
- If the battery pack is not fully charged or if it is used in a cold place, its operating time is also shortened.

WHEN THE BATTERY BECOMES WEAK [B-4]

The BATTERY indication and red lamp blink in the viewfinder and the  indication blinks in the display window. Replace the battery pack with the fully charged one.

USING THE NP-22 BATTERY PACK

A fully-charged NP-22 battery pack can operate this unit for approximately 60 minutes. For using the NP-22, an optional NPA-22 battery adaptor is necessary.

OPTIONAL ACCESSORIES FOR CHARGING

- AC-V55 AC power adaptor
- Two battery packs can be charged simultaneously.
- BCA-70 or BCA-80 battery charger, ACP-88 AC pack and NPA-55 battery adaptor
- For charging, insert an NP-55 into the NPA-55.

HOUSE CURRENT—USING AC-V33 AC POWER ADAPTOR [B-5]

- 1 Insert the connecting cord supplied with the AC-V33 AC power adaptor into the DC OUT jack on the AC power adaptor.
- 2 Attach the connecting plate to the battery mounting surface on the video camera recorder.
- 3 Connect the AC power adaptor to a wall outlet.
- 4 Press the POWER switch on the adaptor.

After using, press the POWER switch on the adaptor again.

To remove the connecting plate from the video camera recorder

While pressing the BATT switch on the recorder, slide and pull out the connecting plate.

- The optional AC-V55 AC power adaptor can also be used to operate this recorder on house current.

CAR BATTERY [B-6]

Use the DCC-16AE car battery cord and the AC-V55 AC power adaptor.

- 1 Insert the connecting cord supplied with the AC-V55 into the DC OUT jack on the AC-V55.
- 2 Attach the connecting plate to the video camera recorder.
- 3 Connect the DCC-16AE car battery cord to the DC IN jack on the AC-V55 and to the cigarette lighter socket of a car (12 V or 24 V).
- 4 Press the POWER switch on the AC-V55.

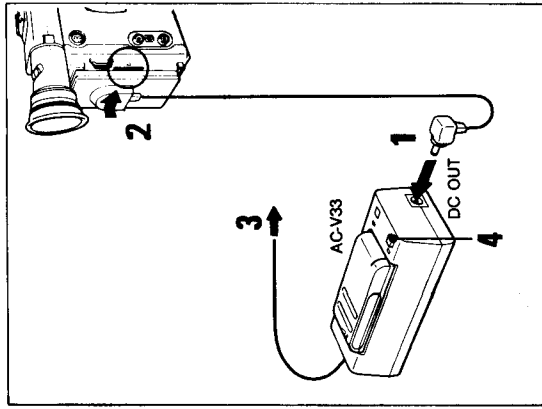
After using, press the POWER switch on the adaptor again.

To remove the connecting plate from the video camera recorder

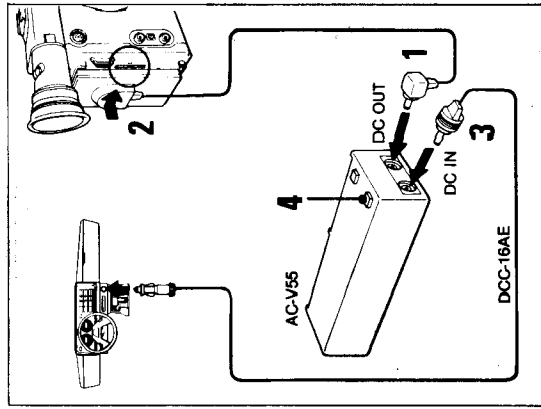
While pressing the BATT switch on the recorder, slide and pull out the connecting plate.

- The optional DCP-55 DC pack can also be used to operate this recorder on a 12V or 24V car battery.

B-5



B-6



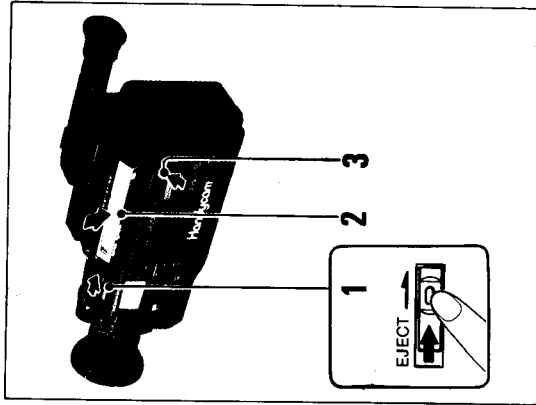
1-3. CASSETTE CASE

CASSETTE INSERTION **C-1**

Make sure that a power source is connected to the unit.

- 1 Press and slide the EJECT switch. The cassette holder will open.
- 2 Insert a cassette with the window outward and the arrow mark down.
- 3 Push the PUSH mark to close the cassette holder.

C-1



CASSETTE EJECTION

- 1 Connect a power source.
- 2 Press and slide the EJECT switch.
- 3 Take the cassette out and push the PUSH mark to close the cassette holder.

NOTES

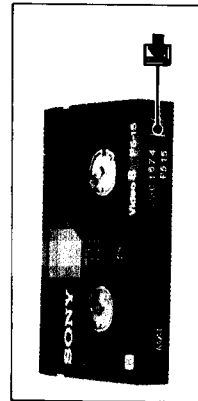
- While the upper lid of the cassette compartment is rising, never pull or push it forcibly.
- When the cassette holder is pressed to close, the upper lid of the cassette compartment will automatically lower. Be careful not to trap your hand between the cassette holder and the lid. To open the cassette holder, press and slide the EJECT button.
- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the kind of tape, thickness of tape, if the tab is out or in, etc.
- To record from the beginning of the tape, run the video camera recorder for about 15 seconds at the beginning of a cassette before recording. It will avoid missing the starting point during playback on a video cassette recorder.

THE TAB ON THE CASSETTE **C-2**

(The photo is of Sony type.)

When a new recording is made on a previously recorded cassette, the previous recording will be automatically erased. To avoid erasing a recording unintentionally, slide the tab out to cover the opening. When the tab is out, a recording cannot be made. To re-record on a cassette, slide the tab in.

C-2



1-4. PREPARATIONS FOR CAMERA RECORDING

GRIP STRAP ADJUSTMENT **D-1**

Adjust the length of the grip strap so that your fingers can manipulate the STANDBY switch, START/STOP button and power zoom button.

VIEWFINDER ADJUSTMENT

Viewfinder lens adjustment **D-2**

This adjustment is necessary only when you use the camera for the first time or after another person has used it, because the distance of optimum vision varies from person to person.

Make sure that the lens cap is removed.

- 1 Press and slide the POWER switch to CAMERA.
- 2 Slide the STANDBY switch up. The unit will be set to recording pause mode and the STBY indication will appear on the viewfinder screen.
- 3 Adjust the viewfinder lens adjustment lever so that the indication on the viewfinder screen come into sharp focus.

NOTE

When the power is turned on, irregular indications may appear on the viewfinder screen. In this case, set the POWER switch to OFF, and set it to CAMERA again.

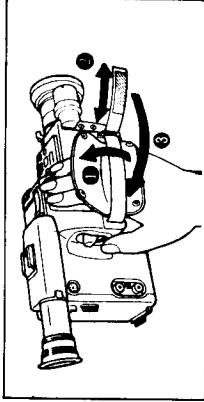
To view with your left eye **D-3**

Pull to detach the rubber eyecup and reattach it as illustrated.

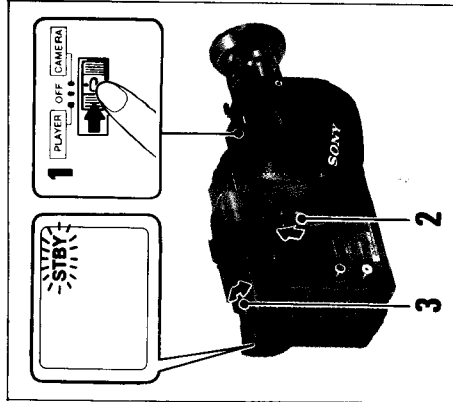
To view through the glasses **D-4**

Fold the rubber eyecup outward.

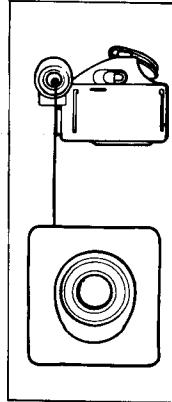
D-1



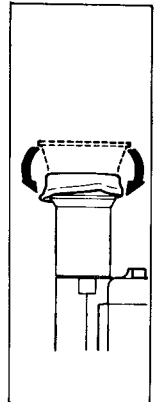
D-2



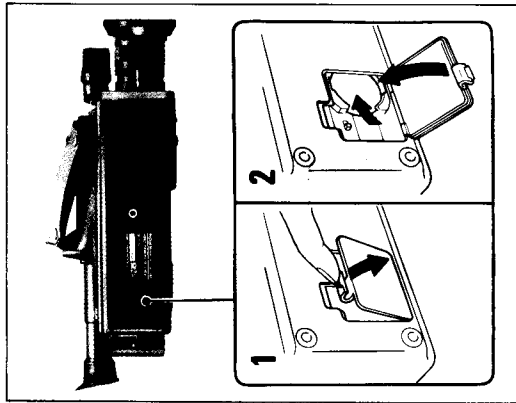
D-3



D-4



D-5



LITHIUM BATTERY D-5

Before operating the unit for the first time, install the supplied lithium battery to activate the clock.

- 1 Open the cover of the lithium battery compartment on the bottom.
- 2 Install the supplied CR2025 lithium battery with the (+) side facing out.
- 3 Close the cover.

To remove the lithium battery

Press the side of the battery in the direction as indicated for installation.

LITHIUM BATTERY LIFE

Approximately 2 years in normal operation. When the lithium battery becomes weak, the DATE or TIME indication will blink in the display window while the date or time is displayed. In this case, replace the battery with a Sony CR2025 lithium battery or equivalent. Use of another battery may present a risk of fire or explosion.

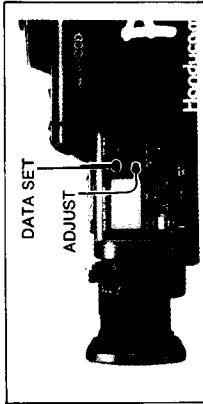
NOTES ON LITHIUM BATTERY

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

WARNING

Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

D-6



DATE/TIME SETTING D-6

Make sure that the lithium battery is installed.

- 1 Press the SELECT button. The DATE indication will appear on the viewfinder screen.
 - 2 Press the DATA SET button for 2 or 3 seconds to display the preset date (1.1.87).
 - 3 Adjust the year, month, day, hour and minute in sequence, following the illustration D-7.
- First adjust the blinking digits with the ADJUST button, and then press the DATA SET button.

- ① Year: 87 = 1987, 00 = 2000
 - ② Month
 - ③ Day
 - ④ Hour
 - ⑤ Minute
- After adjusting the minute digits, press the DATA SET button at the same time with an announced time signal.
- The clock starts operating.
- 4 To reset to the counter mode, press the SELECT button.

There is no need to readjust the date and time as long as the lithium battery remains.

THE ADJUST BUTTON CAN BE PRESSED IN TWO WAYS:

- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

To change the adjusted digits during setting

- 1 Press the DATA SET button repeatedly until the clock starts operating.
- 2 Press the DATA SET button for 2 or 3 seconds so that the year digits blink.
- 3 Press the DATA SET button repeatedly until the digits to be changed blink.
- 4 Change the digits with the ADJUST button and then press the DATA SET button.

To readjust the date or time after the setting has been completed

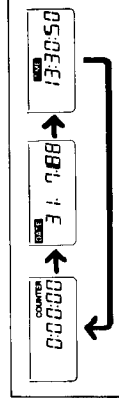
- 1 Press the SELECT button to display the date or time.
- 2 Press the DATA SET button for 2 or 3 seconds so that the year digits blink.
- 3 Press the DATA SET button repeatedly until the digits to be changed blink.
- 4 Change the digits with the ADJUST button and press the DATA SET button repeatedly until the clock starts operating.

To check the date and time D-8

Each time the SELECT button is pressed, the display changes as follows:

Counter → Date → Time → Counter...

D-8

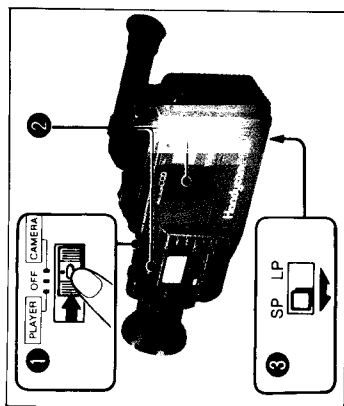


1-5. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

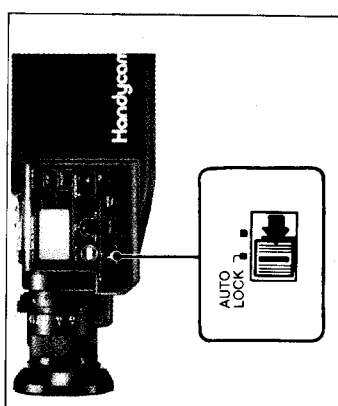
CAMERA RECORDING

- 1 Press and slide the POWER switch to CAMERA and insert a cassette. [E-1]
- 2 Set the recording mode/EDIT switch to LP or SP, according to the length of the programme to be recorded. [E-1]
The recording time of a cassette in the LP mode is twice as long as that in the SP mode.
- 3 Set the AUTO LOCK switch to the left (green AUTO LOCK position). [E-2]
In this position, the focus, white balance and iris will be adjusted automatically.
- 4 Slide the STANDBY switch up. [E-3]
The unit will be set to recording pause mode.
- 5 To start recording, press the START/STOP button. [E-4]
- 6 To stop recording, press the START/STOP button.
The unit will be set to recording pause mode.

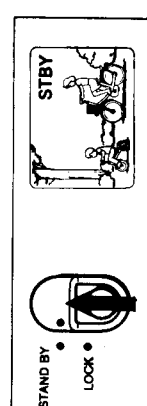
[E-1]



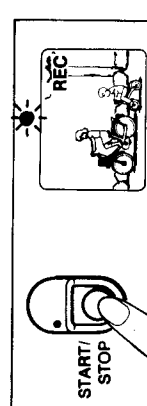
[E-2]



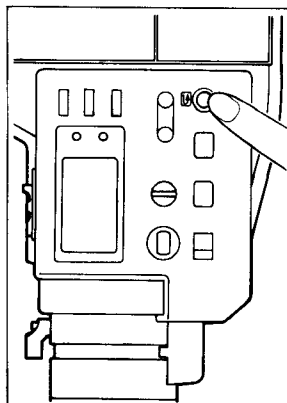
[E-3]



[E-4]



[E-5]



To check the last scene of the previous recording

Press the [E-5] button momentarily. [E-5]

The last few seconds of the recorded scene are played back in reverse, and then played back normally. Then the unit will enter recording pause mode.

After recording

Slide the STANDBY switch down and set the POWER switch to OFF.

NOTES ON RECORDING

- If you leave the unit in the recording pause mode for 7 minutes or more, the power will be automatically turned off.
- To resume recording pause mode, slide the STANDBY switch down and slide it up again.
- Avoid mechanical shock or shaking of the unit in recording pause mode. Otherwise, smooth recording will not be obtained when recording is resumed.
- When the POWER switch is moved during recording, the tape will stop.
- Should you shoot a subject in bright conditions such as sunlight just after shooting in a dark place, the picture may not appear on the viewfinder screen. In this case, move the camera away from the subject to resume the normal condition.
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.
- When playing back a tape recorded with this unit on a VTR equipped with PCM function, set the audio monitor selector on the VTR to the standard position.
- When a new recording is made with this unit using a tape on which PCM stereo sound has previously been recorded, set the monitor switch of the video cassette recorder for playback to the STD (standard) position. Otherwise, the sound may not be heard or may be distorted.

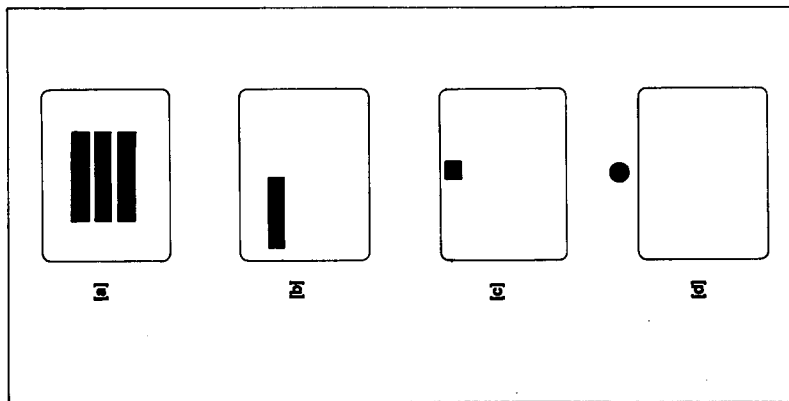
NOTES ON AUTOMATIC ADJUSTMENT

- During camera recording, do not touch the focus ring or cover the white balance sensor.
- If there is insufficient light, the auto focusing and auto white balance do not operate properly. Add an appropriate light.
- The camera recording with automatic adjustment may not produce optimum results under certain conditions or ambient lighting. In this case, manually adjust the focus, white balance and iris. See page 12, 13 and 14.
- The shutter speed is fixed at normal in AUTO LOCK position.

E-6

CAUTION INDICATORS ON THE VIEWFINDER SCREEN E-6

A caution indicator will be displayed on the viewfinder screen.



BATTERY	Blinks, then goes out.	The battery is weak.
TAPE END	Blinks.	The tape reaches its end.
CASSETTE	Blinks.	- No cassette inserted. - The safety tab is out. (page 8)
DEW	Blinks.	Moisture condensation inside the unit. (page 22)
CAUTION	Blinks.	Moisture condensation on the tape surface, etc. (page 22)
INDOOR	Lights.	The WHITE BAL button is set for indoor recording. (page 13)
OUTDOOR	Lights.	The WHITE BAL button is set for outdoor recording. (page 13)
White mark	Lights.	Manual focusing mode is set. (page 12)
	Blinks.	Auto focusing does not work correctly. (page 12)
Red lamp	Lights.	During recording.
	Blinks.	Battery is weak.

E-7

TO RECORD THE DATE OR TIME E-7

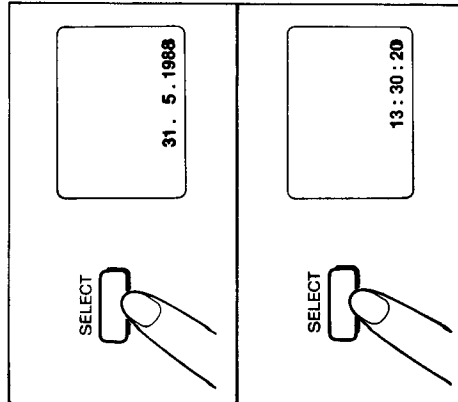
During camera recording or in recording pause mode, press the SELECT button once or twice to display the date or time on the viewfinder screen.

If the unit is set to recording mode, the date or time being displayed will be recorded together with the picture.

To stop recording the date or time, press the SELECT button twice or once to extinguish the display. The picture recording will continue.

NOTES

- The date or time can be recorded only during a camera recording. To insert the date or time while editing a tape, see "INSERT RECORDING" on page 20.
- To display the time or to extinguish the date during recording, press the SELECT button twice in succession to pass over the unnecessary date or time display rapidly. Otherwise, the unnecessary display will be recorded. When the SELECT button is pressed in succession, such a display will appear momentarily but will not be recorded.



1-6. MANUAL FOCUSING

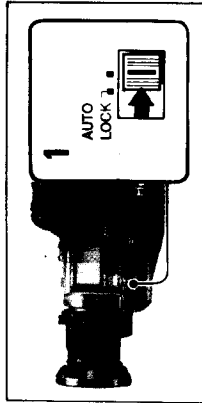
Auto focusing will be activated for almost any subject centered in the viewfinder. However, for some subjects listed on page 13, or when the white mark blinks on the center top of the viewfinder screen, use manual focusing.

- 1 Set the AUTO LOCK switch to the right position (white mark). [F-1]
- 2 Turn the manual zoom lever to the telephoto position (72) to make the subject as large as possible in the viewfinder. [F-2]
- 3 Press the FOCUS button so that the white mark appears on the center top of the viewfinder screen. [F-3]
- 4 Turn the focus ring to achieve sharp focus. [F-3]
- 5 Set the desired shot length using the manual zoom lever. [F-4]

SOME HELPFUL HINTS

- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus regardless of movement by setting the zoom lever to 12 and the focus ring to 2 m.
- The figures on the focus ring indicate the distance between the subject and the ∞ mark on the side of the recorder body.
- When shooting in low light situations, such as indoors, the depth of field for proper focus becomes very shallow. For best results, set the focus in telephoto, and shoot at wide angles.

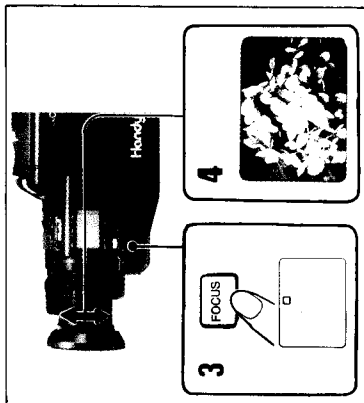
[F-1]



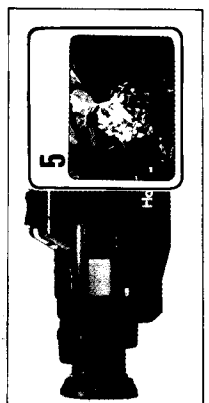
[F-2]



[F-3]



[F-4]



MONITORING THE PLAYBACK PICTURE ON THE VIEWFINDER SCREEN [E-8]

- 1 Set the POWER switch to PLAYER.
- 2 Press the $\blacktriangleright$ button to rewind the tape.
- 3 Press the $\blacksquare$ button to stop the tape.
- 4 Press the $\triangleleft$ button to start playback. The playback picture will appear on the viewfinder screen.

To stop the playback, press the $\blacksquare$ button.

To monitor the playback sound, connect an earphone to the $\odot$ jack.

NOTE

The playback picture and sound may be affected in a moving vehicle.

SMOOTH RECORDING

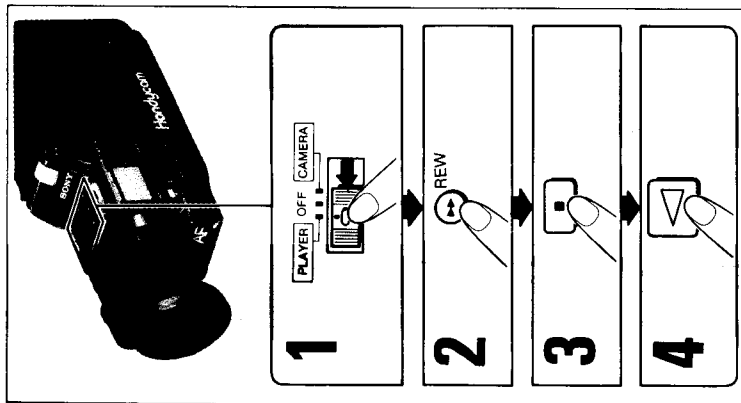
Smooth recording can be made even if the recording is stopped and started again, or even if the power is turned off and on again, provided that the cassette is not removed. But, if the cassette has been removed, proceed as follows.

- 1 Select the same recording mode with the recording mode/EDIT switch in the lithium battery compartment as was used for the already recorded portion.
- 2 Set the POWER switch to CAMERA.
- 3 Insert a cassette.
- 4 Slide the STANDBY switch up.
- 5 Locate the point from which the recording is to begin again by monitoring the picture on the viewfinder screen. [E-9]
- 6 Press the "+" side of the EDITSEARCH button to advance the picture at a normal playback speed, or the "-" side to reverse the picture.
- 7 At the desired point, release the EDITSEARCH button. The unit will be set to recording pause mode after 2 seconds.
- 8 Press the START/STOP button to start recording.

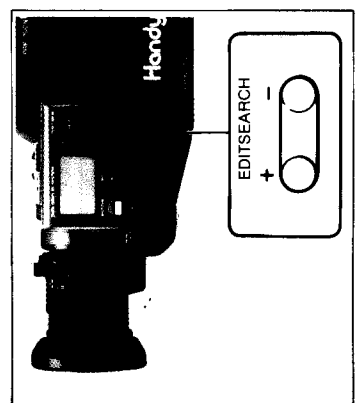
NOTES

- Smooth recording cannot be obtained if two recordings are carried out on different recorders, on this unit and another recorder.
- If the picture is monitored on a TV or video monitor, it may be distorted or appear in monochrome while the EDITSEARCH "+" button is pressed.

[E-8]

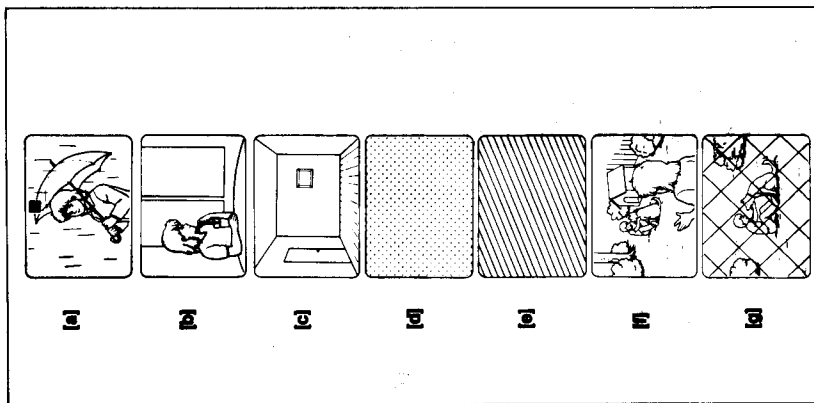


[E-9]



DIFFICULT CONDITIONS FOR AUTO FOCUSING F-5

- [a] Insufficient light
- [b] Too much bright light behind the subject
- [c] Subjects with flat colours and less contrast—wall, sky, etc.
- [d] Finely detailed repetitive patterns
- [e] Slant stripes
- [f] When the distance between subjects at the center is extreme (e.g. one subject is close, the other is away)
- [g] Subjects beyond screens, nets, etc. or when another subject passes across the camera



F-5

OTHER USES OF MANUAL FOCUSING

- When using special effects lenses or filters
 - When shooting still subjects on a tripod
 - To save battery wear
- (When the AUTO LOCK switch is set to the green mark position, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)
- For close-up shooting (See page 15.)
 - When shooting in a hot place.

TCL AUTO FOCUSING SYSTEM

The TCL (Through Camera Lens) auto focusing system incorporated in this unit utilizes high-precision sensors to determine picture contrast at the center of the viewfinder screen (the portion marked with the blue bar in the illustration) and adjust focus accordingly for automatic, highly accurate focusing. F-6

NOTE
It may take several seconds to get focus when the camera is rapidly panned from a near subject to a distant subject with less contrast.

F-6



1-7. MANUAL WHITE BALANCE

In most cases, the auto white balance function of this unit adjusts the white balance automatically. However, if it does not work correctly in the conditions listed below, adjust the white balance manually.

DIFFICULT CONDITIONS FOR AUTO WHITE BALANCE G-1

- [a] Insufficient light
- [b] When lighting conditions change quickly
- [c] When the light source for the subject is different from that illuminating this unit
e.g. when the subject is in a spotlight, or when the subject is outdoors but the camera is indoors, etc.
- [d] Special light sources such as sodium lamps, the setting sun, etc.

TO ADJUST THE WHITE BALANCE MANUALLY G-2

- 1 Set the AUTO LOCK switch to the right position (white mark).
 - 2 Press the WHITE BAL button once or twice so that the appropriate white balance indicator appears on the viewfinder screen.
- [a] To record subjects outdoors: **OUTDOOR** (5,800 K)
- [b] To record subjects indoors: **INDOOR** (3,200 K)

Recommended setting for various subjects

OUTDOOR: sunset, fireworks, subjects in a sunny window, etc.

INDOOR: candle flames in darkness, subjects in the spotlight, scenes before sunrise, subjects in a tunnel (illuminated by sodium lamps), neon signs, etc.

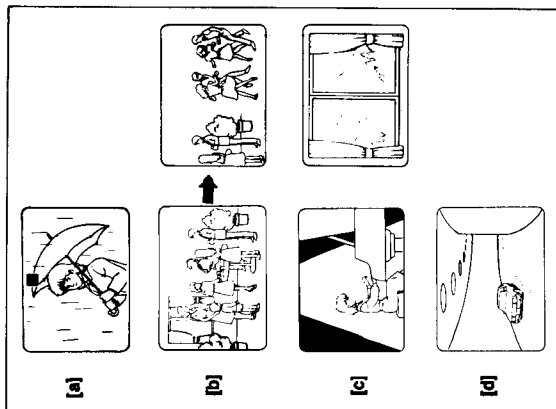
WHAT IS THE WHITE BALANCE?

The colour of the subject being recorded can be affected by the ambient light. White balance adjustment is necessary for compensating for this colour variation, so that a white subject, for example, can be recorded white without reference to the light source.

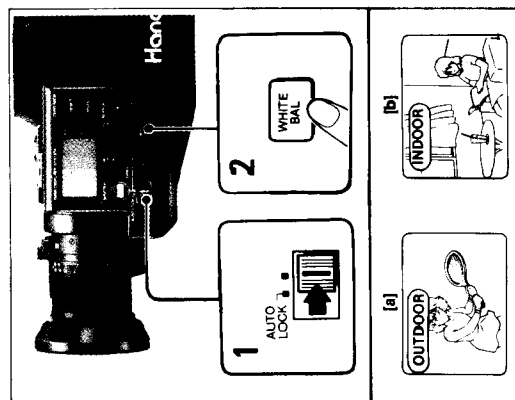
AUTO WHITE BALANCE SYSTEM

The auto white balance system of this unit utilizes the white balance sensor to determine the colour temperature of the ambient light and adjust the white balance accordingly. As the ambient lighting condition changes gradually, such as in twilight, the white balance will be readjusted automatically. As the sensor is built in the unit, however, optimum white balance adjustment cannot be obtained if the subject and this unit are under different lighting conditions.

G-1



G-2

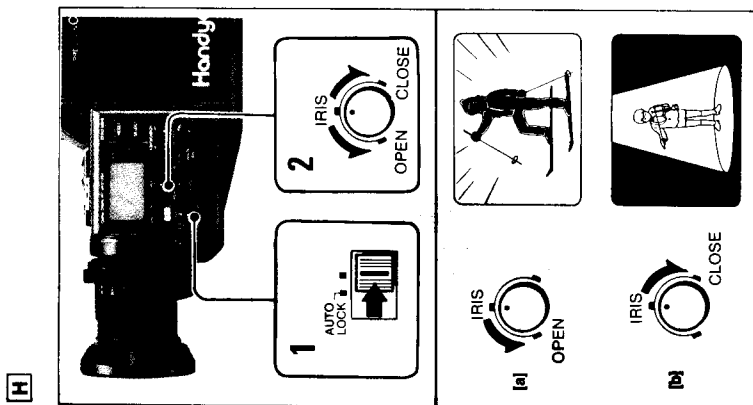


1-8. MANUAL IRIS ADJUSTMENT H

The iris is adjusted automatically when the AUTO LOCK switch is set to AUTO LOCK. When shooting a scene with strong contrast, adjust the iris manually.

- 1 Set the AUTO LOCK switch to the right position (white mark).
- 2 Adjust the IRIS control.
 - [a] When backlit shot results in the subject being too dark: Turn IRIS toward OPEN.
 - [b] When a subject is too bright against a dark background: Turn IRIS toward CLOSE.

After shooting that particular scene, set the IRIS control to the center position (green mark).



1-9. SHUTTER SPEED ADJUSTMENT

When the shutter speed is fast, subjects moving at high speed, such as a moving golf ball or tennis ball, can be recorded clearly.

Five shutter speeds can be selected on this unit: 1/50 (normal speed), 1/200, 1/1000, 1/500, 1/120. Select the appropriate shutter speed according to the subject and the ambient lighting conditions.

TO SELECT THE SHUTTER SPEED I-1

- 1 Set the AUTO LOCK switch to the right position (white mark).
- 2 Press the SHUTTER SPEED button repeatedly until the desired shutter speed indication appears on the viewfinder screen. Each time the SHUTTER SPEED button is pressed, the indication changes:
No indication → 2000 → 1000 → 500 → 120
(1/50) (1/200) (1/1000) (1/500) (1/120)

Recommended shutter speed settings

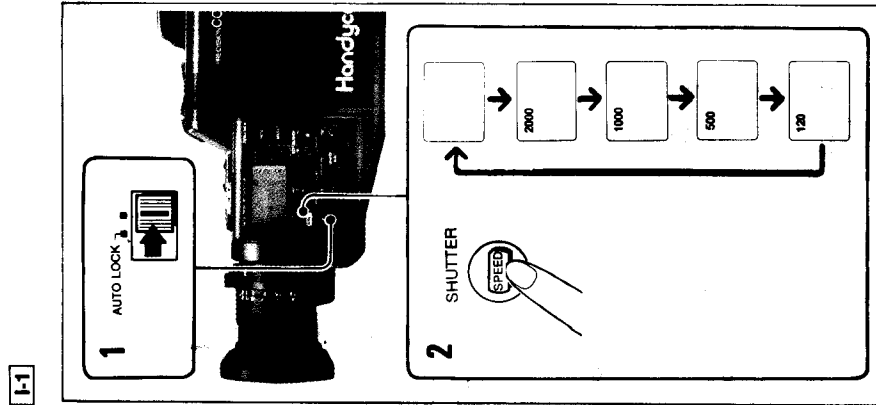
The faster the shutter speed is, the better the movements of the subjects can be followed but the recorded picture becomes darker. Select the appropriate shutter speed while observing the brightness of the picture on the viewfinder screen.

Location	Recommended shutter speed
- Sunny golf courses and tennis courts - Snow-covered mountains - Beach in summer	1/2000
- Slightly overcast outdoors - Roofed golf practice ground	1/1000
- Cloudy outdoors - Indoor tennis courts	1/500 or 1/120

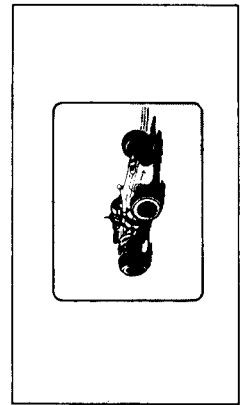
A noiseless still, frame-by-frame and slow pictures are obtained when the picture recorded with the faster shutter speed is played back. This is convenient for checking your golf or tennis form, etc.

NOTES

- When the shutter speed is changed during a camera recording of a TV screen, the brightness of the recorded picture may vary in a single image. I-2
- When a very bright object is shot with a faster shutter speed, a light, vertical, belt-like line ("smear") may appear on the screen. This is not a failure of the unit.



I-2



1-10. ZOOMING

Either power zoom or manual zoom can be used to change the size of the subject in the scene.

POWER ZOOM **J-1**

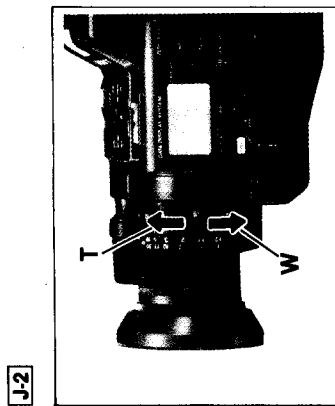
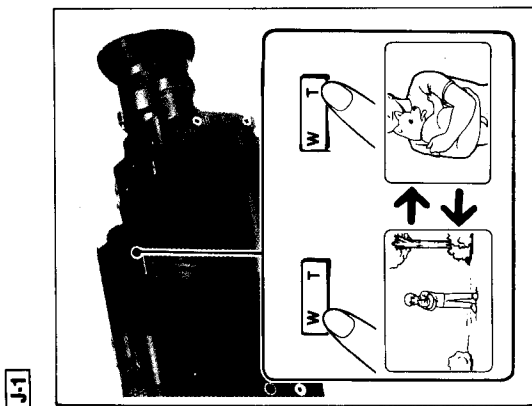
— for smooth and constant zooming

Press the "T" side of the power zoom button for telephoto (T) and the "W" side for wide-angle (W). The zoom ring will move automatically.

MANUAL ZOOM **J-2**

— to create a dramatic effect

Turn the manual zoom lever upward for telephoto (T) and downward for wide-angle (W).



1-11. CLOSE-UPS(Macro) **K**

Use of the macro function allows the camera to approach the subject almost to the lens, so that even tiny objects can literally fill the screen for dramatic close-up effects.

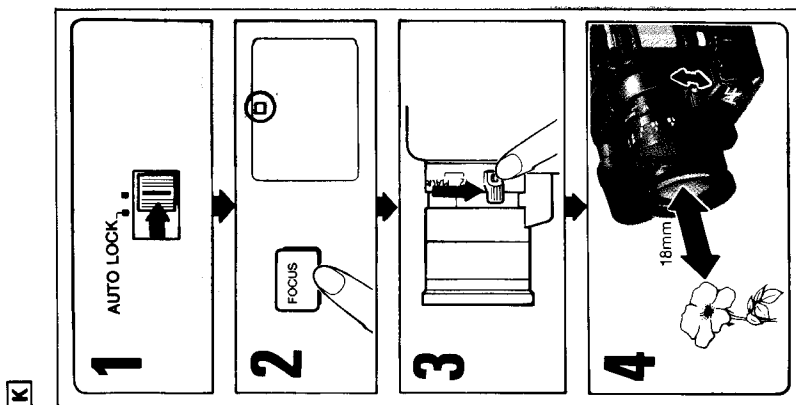
Remove the lens hood before operation.

- 1 Set the AUTO LOCK switch to the right position (white mark).
- 2 Press the FOCUS button so that the white mark appears on the center top of the viewfinder screen.
- 3 While keeping the green macro set button pressed, turn the manual zoom lever to the MACRO position.
- 4 Focus by turning the manual zoom lever within the MACRO range.

The recorder can move to a subject as close as 18 mm (23/32 in.) from the lens surface.

NOTES ON MACRO SHOOTING

- When shooting in macro, the depth of field is very shallow, so pay attention to focus. To keep the subject in focus, use a tripod or monopod.
- Zooming is not possible during macro shooting. To change the size of the subject, move the video camera recorder closer or further away from it.
- Auto focusing does not function during macro shooting.
- When removing and attaching the lens hood, hold the focus ring.



1-12. PLAYBACK OF THE RECORDED TAPE

CONNECTING A TV

Connecting a TV without audio/video input connectors [L-1]

- 1 Connect the RFU-89E/AS RFU adaptor to the CCD-V90E.
- 2 Connect the aerial, CCD-V90E and TV to the aerial selector (supplied with the RFU-89E/AS). Use a 75-ohm coaxial cable for aerial connection.
- 3 RFU-89E only: Set the I/G selector according to the TV system of your country.
- 4 Adjust one of the TV programme positions to receive the signal from the video camera recorder. See "Adjusting the TV" below.
- 5 Set the selector switch on the aerial selector as follows:

For viewing a playback picture → VTR
For viewing TV programmes → ANT

- 6 Select the same channel on the TV as that selected in adjusting the TV.

Adjusting the TV with the RFU-89E

- 1 Turn on the TV and select a programme position which is not being used to receive a TV station.
- 2 Set the POWER switch of the CCD-V90E to CAMERA and slide the STANDBY switch up.
- 3 Set the selector switch of the aerial selector to VTR.
- 4 Tune the TV until you see the picture and hear the sound from the CCD-V90E.

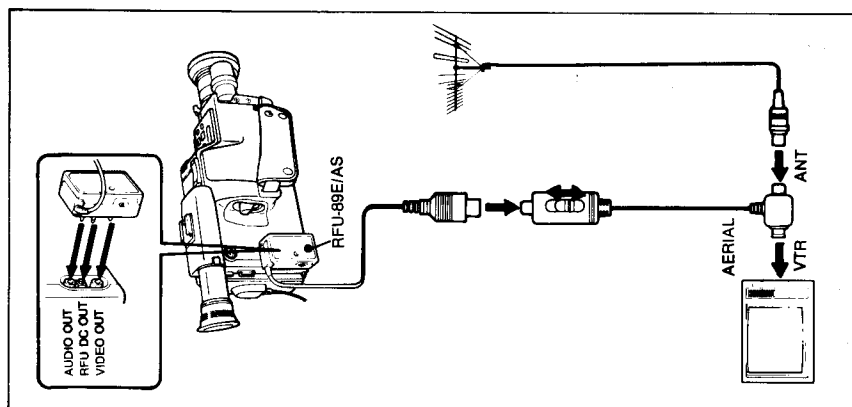
If the playback picture is not free of disturbance
1 Set the selector switch of the aerial selector to ANT.

- 2 Adjust the programme position of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound is heard.
- 3 Set the selector switch of the aerial selector to VTR.
- 4 Slowly turn the RF channel of the RFU-89E with the supplied screwdriver, until the picture from the CCD-V90E becomes clear. [L-2]
Now the TV adjustment is complete.

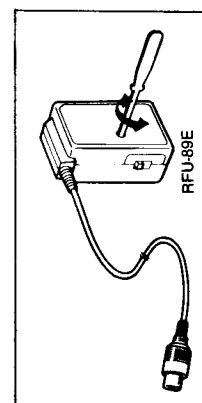
Adjusting the TV with the RFU-89AS

Select the CHANNEL selector on the RFU-89AS to 0 CH or 1 CH, whichever is not active in your area, and select the same channel on the TV.

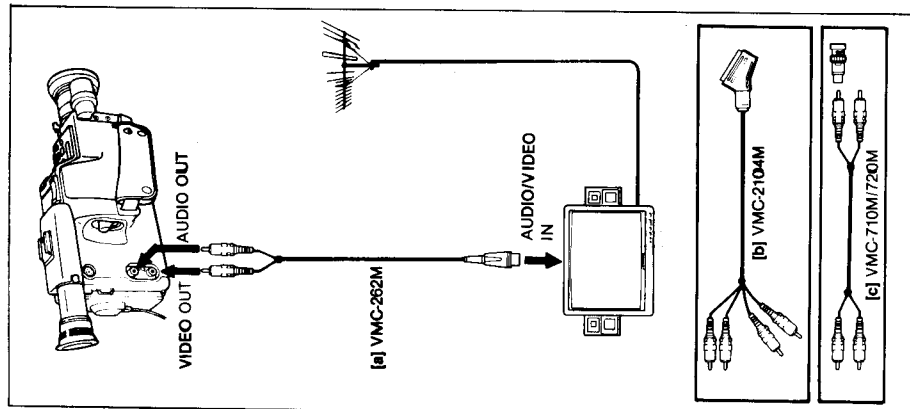
[L-1]



[L-2]



[L-3]



Connecting a TV (or colour monitor) equipped with audio/video input connectors [L-3]

Leave the TV aerial cable connected to the TV.

- 1 Connect the CCD-V90E to the TV using an optional connecting cable to match the connectors on the TV.
[a] VMC-262M: to a 6-pin DIN connector
[b] VMC-2104M: to a 21-pin connector (EUROCONNECTOR)
[c] VMC-710M/720M: to phono and BNC-type connectors
- 2 Set the TV/VIDEO selector button on the TV as follows:

For viewing a playback picture → VIDEO
For viewing TV programmes → TV

L-4

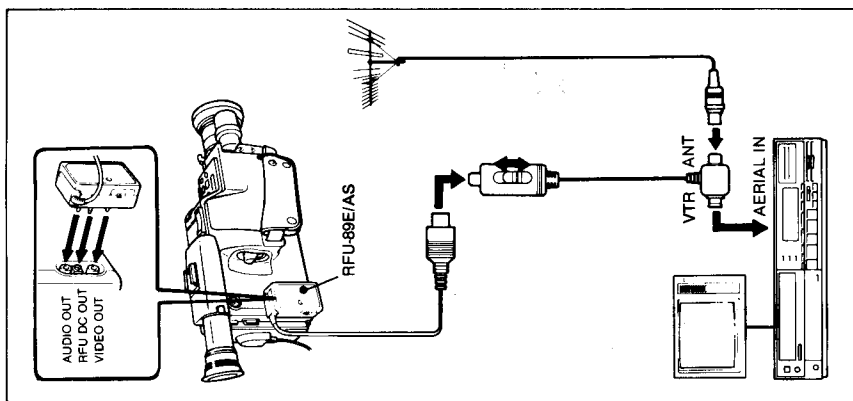
Connecting a TV connected to another VTR without an input selector **L-4**

Connect the RFU-89E/AS RFU adaptor to the CCD-V90E.

- 1 Connect the RFU-89E/AS, TV, and the VTR to the aerial selector (supplied with the RFU-89E/AS).
Use a 75-ohm coaxial cable for aerial connection.
- 2 RFU-89E only: Set the I/G selector according to the TV system of your country.
- 3 Adjust one of the TV programme positions to receive the signal from the video camera recorder. See "Adjusting the TV" on page 16.
- 4 Set the selector switch on the aerial selector as follows:

For viewing a playback picture → VTR
For viewing TV programmes and playback picture of the VTR → ANT

- 5 Select the same channel on the TV as that selected in adjusting the TV.



L-5

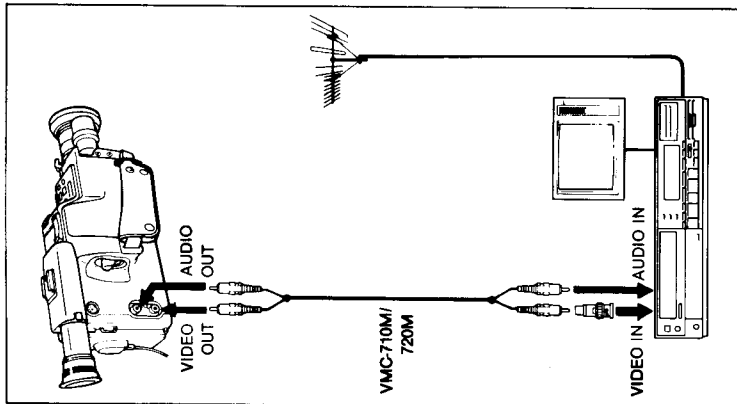
Connecting a TV connected to another VTR with an input selector **L-5**

Use the optional VMC-710M/720M connecting cord.

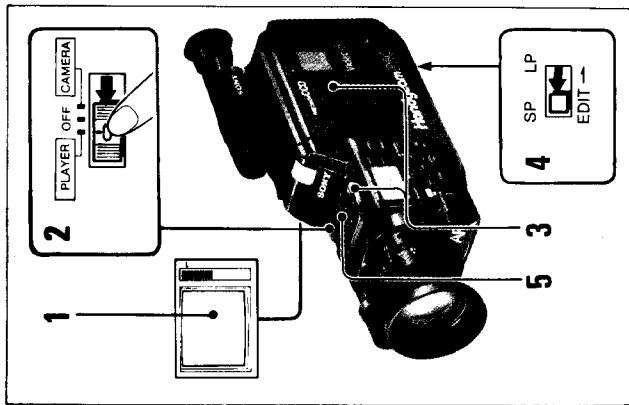
Set the selectors on the VTR as follows:
Input selector → LINE
TV/VTR selector → VTR

NOTE

When the VTR to be connected has stereo audio inputs, use the optional VMC-910MS/920MS connecting cord.



M-1



TO PLAY BACK M-1

- 1 Turn on the TV or colour monitor, and select the channel for the video camera recorder or set the TV/VIDEO select button to VIDEO.
- 2 Set the POWER switch to PLAYER.
- 3 Insert a cassette.
- 4 Set the recording mode/EDIT switch in the lithium battery compartment in the opposite direction to the arrow (EDIT OFF).
- 5 Press the < button. Playback begins.
The unit detects the recorded mode of the tape, and adjusts the tape speed automatically.

To stop playback, press the ■ button.

When the tape comes to its end, the unit is automatically set to stop mode.

VARIOUS PLAYBACK MODES

To obtain a still picture

Press the ■ button during playback. To resume normal playback, press the < button or press the ■ button again.

When the pause mode lasts for more than approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

Frame-by-frame playback

Press the < button in still picture mode. If the < button is kept depressed, a slow motion picture at 1/10 normal speed is obtained. To resume normal playback, press the < button.

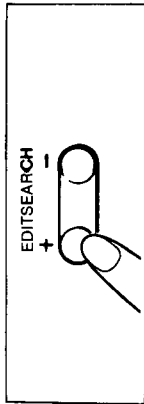
To view the picture at high speed

Keep pressing the << (fast-forward) or >> (rewind) button during playback. Release the button for normal playback.

NOTES

- Streaks will appear in high-speed playback mode. The sound will be muted in the still picture, frame-by-frame playback and high-speed playback modes.
- When a tape is recorded in SP mode, a still picture, frame-by-frame picture, slow motion picture and high-speed picture may be noisy with many streaks and become black and white.
- Streaks will be wider than those of an LP-recorded tape.
- If the position of the POWER switch is changed during playback, the tape will stop.
- If the POWER switch is slid to CAMERA, the unit will be set to recording pause mode.

M-2



To adjust the frame-by-frame and slow playback pictures M-2

In slow playback mode, press the "+" or "-" side of the EDITSEARCH button until a clear picture is obtained. Repeat adjusting until a still picture is displayed clearest.

To adjust the still picture

If the still picture appears to shake, press the "+" or "-" side of the EDITSEARCH button until the picture stabilizes.

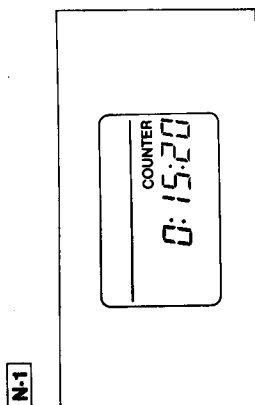
NOTE

The adjustment is retained in memory as long as the lithium battery is installed. Readjustment is only required when the tape speed, LP or SP, is changed, when the equipment used for playback is changed or when tapes recorded on other equipment are played back on this unit.
The noise may not be eliminated completely when a tape recorded on other equipment is played back in still or slow picture mode.

1-13. USE OF THE TAPE COUNTER

During recording or playback in SP mode, the digits on the counter indicate the actual recording or playback time. In LP mode, the counter counts approximately half the actual recording or playback time.
Eg. When the counter indicates "0:15:20" during playback of an LP-recorded tape, the tape was played back for approximately 30 minutes 40 seconds from the counter zero position. **[N-1]**

The counter reading is the same as above in rewind and fast-forward modes, and also in the display window on the optional RM-94 Remote Commander and RM-E100V editing controller.



TO INDEX THE WHOLE TAPE

Press the RESET button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

NOTES

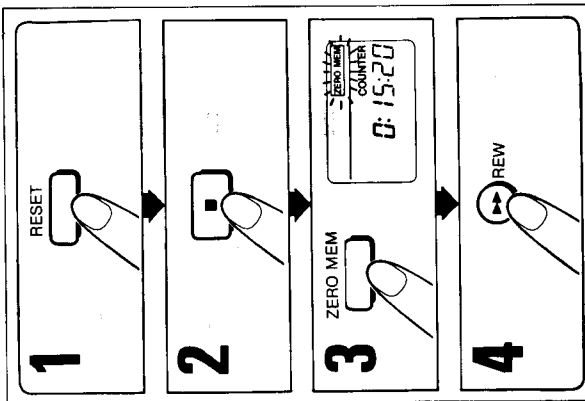
- The counter reading and the point of the tape may not correspond exactly.
- The counter also operates for a blank, unrecorded portion of a tape.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations or after playing back in slow mode for a long time.

TO RETURN TO A PRE-REGISTERED POINT **[N-2]**

- 1 During recording or playback, press the RESET button at the point you later want to locate.
- 2 Press the **■** button when the recording or playback has finished.
- 3 Press the ZERO MEM button. The "ZERO MEM" indicator will blink in the display window.
- 4 Press the **▶▶** or **◀◀** button. The tape will be rewound or sent forward and stop automatically when the counter reaches approximately zero.

NOTES

- The ZERO MEM button does not function during recording or playback mode.
- Be sure to press the ZERO MEM button when the tape is stopped.
- The ZERO MEM mode is cancelled automatically once the tape is rewound or sent forward to zero.



1-14. EDITING **[O]**

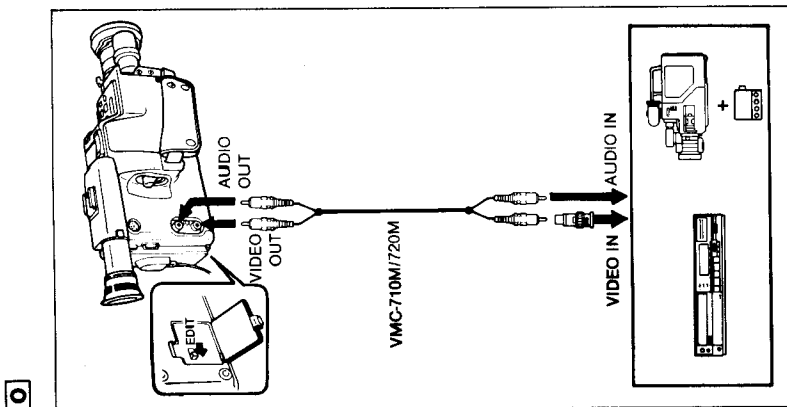
You can edit a tape from the CCD-V90E to another VTR.

- 1 Set the POWER switch on the CCD-V90E to **PLAYER**.
- 2 Slide the EDIT switch in the lithium battery compartment in the arrow direction ("EDIT" position).
- 3 Start playback on the CCD-V90E.
- 4 Start recording on the other VTR.

Function of the EDIT switch

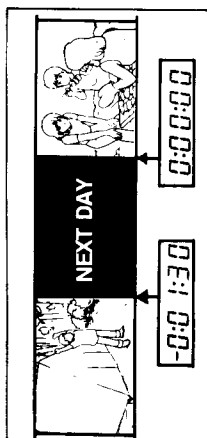
Slide this switch in the arrow direction whenever you edit tapes. Signal loss that results from tape-to-tape transfer will be reduced, achieving more accurate signal transfer. When recording in the SP mode or playing back normally, keep this switch in the opposite position.

The optional RM-E100V video editing controller allows easier editing between two units.



1-15. INSERT RECORDING

You can insert (record) video and audio simultaneously from the camera onto any recorded tape. **P-1**



P-1

OPERATION **P-2**

- Monitor the picture being inserted on the viewfinder screen.
- Select the same tape speed as was used for already recorded portion with the recording mode/EDIT switch in the lithium battery compartment.

- 1 Set the POWER switch to CAMERA.
- 2 Slide the STANDBY switch up to set the unit to recording pause mode.
- 3 Keep pressing the "+" or "-" side of the EDITSEARCH button and release the button at the point where the insert should end. The unit will be set to recording pause mode.
- 4 Display the counter in the display window and press the RESET button. The counter is reset to zero.
(For an accurate ending point, press the RESET button immediately after the EDIT SEARCH button is released and while the still picture is displayed.)
- 5 Keep pressing the "-" side of the EDITSEARCH button and release the button at the point where the insert should begin. Press the ZERO MEM button.
- 6 Press the START/STOP button. The insert ending point is stored in memory.
- 7 Press the START/STOP button. Insert recording will begin.

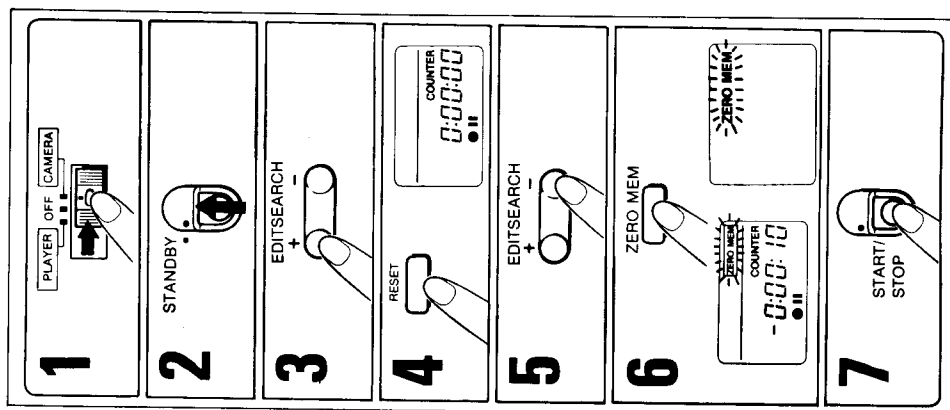
The insert recording will stop automatically near the counter zero point.

To cancel ZERO MEM mode, press the ZERO MEM button so that the ZERO MEM indicator disappears.

To insert the date or time

Follow steps 1 through 6 above, press the SELECT button to display the date or time indication on the viewfinder screen and then press the START/STOP button.

P-2



NOTES ON ZERO MEM MODE

ZERO MEM mode is cancelled automatically in the following cases.

- When an insert recording is completed.
- When the **■** or **<** button is pressed or the tape is sent forward or rewound in fast-forward or rewind mode.
- When the position of the POWER switch is changed.
- When the power is turned off.
- When the cassette is ejected.
- To restore it, press the ZERO MEM button again.

NOTES

- When recording pause mode lasts for approximately 7 minutes, pause mode will be automatically released and the unit will be set to stop mode.
- When the inserted tape is played back, the picture may be distorted at the end of the inserted programme.

1-16. REMOTE CONTROL OPERATION

With an optional RM-94 Remote Commander, you can operate the CCD-V90E video camera recorder from a distance.

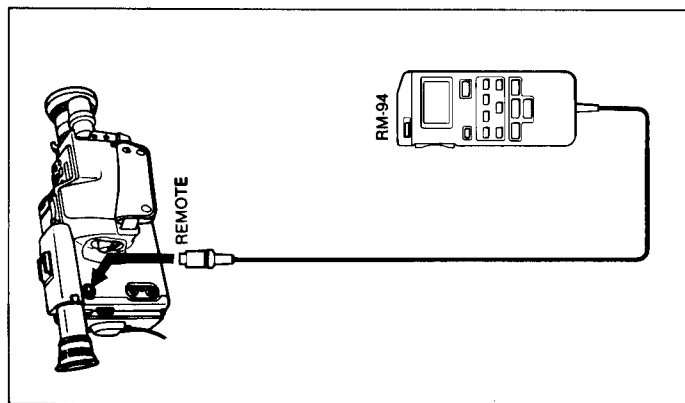
For details on operation, see the instruction manual provided with the Remote Commander.

USING THE RM-94

The optional RM-94 Remote Commander can also be used with this unit.

- To turn the CCD-V90E on and off with the RM-94, first set the POWER switch on the CCD-V90E to CAMERA or PLAYER as required, and press the VTR POWER button on the RM-94.
- The CAMERA POWER button on the RM-94 does not function with the CCD-V90E.
- To start and stop camera recording with the RM-94, keep the STANDBY switch on the CCD-V90E in the upper position.
- When the POWER switch is set to CAMERA on the CCD-V90E, both the CAMERA POWER and VTR POWER lamps light on the RM-94. This is not a problem.





1-17. USE OF AN EXTERNAL MICROPHONE

The built-in microphone picks up sounds equally from all directions (omni-directional, monaural type).

By using an optional microphone ECM-Z200, ECM-K120, etc., you can enjoy more efficient audio recording.

ECM-Z200

This microphone can zoom the sound as the lever is slid.

For attachment, the optional SAD-100 external microphone shoe is required.

ECM-K120

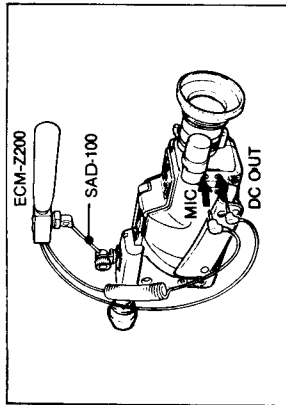
This microphone can pick up sound in three zones and switch from zone to zone as the selector is set.

Attach the microphone directly to the CCD-V90E.

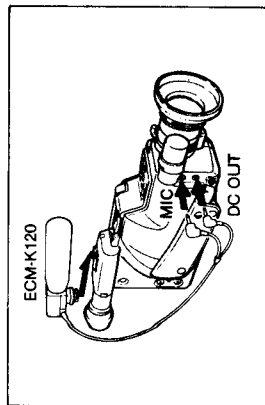
NOTE

The built-in microphone will not operate when an optional microphone is connected to the MIC jack.

 R-1



 R-2



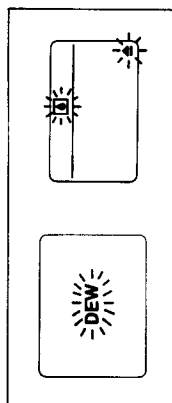
1-18. NOTES ON MOISTURE CONDENSATION

If the unit is brought directly from a cold to a warm location, moisture may condense inside the unit, on the surface of the tape or on the lens. In this condition, the tape may adhere to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the unit is furnished with moisture sensors.

If moisture is present inside the recorder section

When the power is turned on, the DEW indicator blinks in the viewfinder and the [E] indicator blinks in the display window. No function button except the EJECT switch will work.

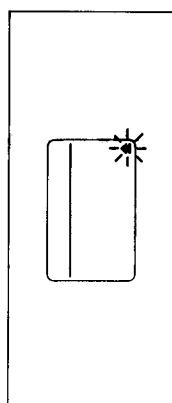
[S-1]



Eject the cassette if present, and turn off the unit and let it sit with the cassette compartment open (at least for one hour).

The unit can be used again if none of the DEW and [E] indicators appears when the power is turned on again.

[S-2]



If moisture is present on the surface of the tape

When the tape is inserted and a tape transport button is pressed, the [E] indicator blinks in the display window. No function button except the EJECT switch will work.

Eject the cassette and let the unit and the cassette sit at least for one hour.

The cassette can be used again if the [E] indicator does not appear when the cassette is inserted and a tape transport button is pressed.

If moisture is present on the lens

There are no caution indicator, but the lens becomes dim. Turn off the power and leave the unit unused at least for one hour.

1-19. TROUBLESHOOTING

If you think you have a problem, double-check before calling the serviceman.
You may have overlooked something relatively simple!

Symptom	Cause	Procedure
The power will not turn on.	The POWER switch on the AC power adaptor is set to OFF.	Depress the POWER switch.
The START/STOP button does not operate.	The tape is affixed to the drum.	Remove the cassette with the EJECT switch.
	The tape is at its end.	Rewind the tape or use a new one.
	The POWER switch is set to PLAYER or OFF.	Set it to CAMERA.
	The tab on the cassette is out (red).	Use a new cassette or slide the tab.
The tape does not move by pressing a tape transport button.	The POWER switch is set to CAMERA or OFF.	Set it to PLAYER.
Recording stops suddenly.	The tape is at its end.	Rewind the tape or use a new one.
The power turns off.	The ZERO MEM mode is set.	Press the ZERO MEM button.
	While being operated in the CAMERA mode, the recorder has been in the pause mode for more than 7 minutes.	Set the POWER switch to OFF and then to CAMERA.
	The battery is exhausted.	Use a charged battery.
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	The contrast between the subject and background is too high; the camera is not malfunctioning.	—
The battery pack is quickly discharged.	The ambient temperature is too low.	—
	The battery pack has not been charged fully.	Charge the battery pack again.
The auto focusing function does not work.	The AUTO LOCK switch is set to the white mark position.	Set it to the green mark position.
	Shooting conditions are not suitable for auto focusing operation.	Focus manually. (See page 12)
The auto white balance function does not work.	The white balance sensor is covered.	Remove the obstacle.
	Shooting conditions are not suitable for the auto white balance operation.	Adjust the white balance manually. (See page 13.)
The cassette cannot be removed from the compartment.	The battery is exhausted.	Use the charged battery or the AC power adaptor.
The image on the viewfinder screen is not clear.	The viewfinder lens is not adjusted.	Adjust the viewfinder lens. (See page 8.)
The playback picture is not clear.	The recording mode/EDIT switch is set to the "EDIT" position.	Set it to the opposite position to the arrow direction.
	The programme position for the VTR is not adjusted correctly on the TV.	Adjust the TV. (See page 16)
	The video heads may be contaminated.	Clean the heads using a cleaning cassette.

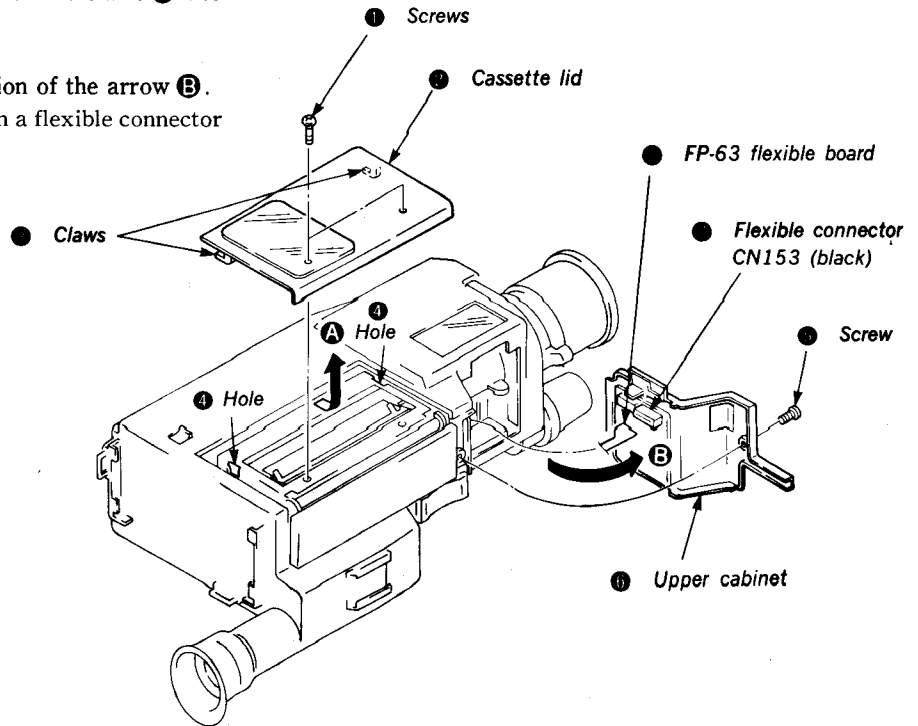
SECTION 2 DISASSEMBLY

2-1. REMOVAL OF CASSETTE LID, UPPER CABINET

- 1) Remove two screws ①.
- 2) Remove cassette lid ② by sliding it in the direction of arrow A.

Note) When installing the cassette lid, set two claws ③ into the holes ④.

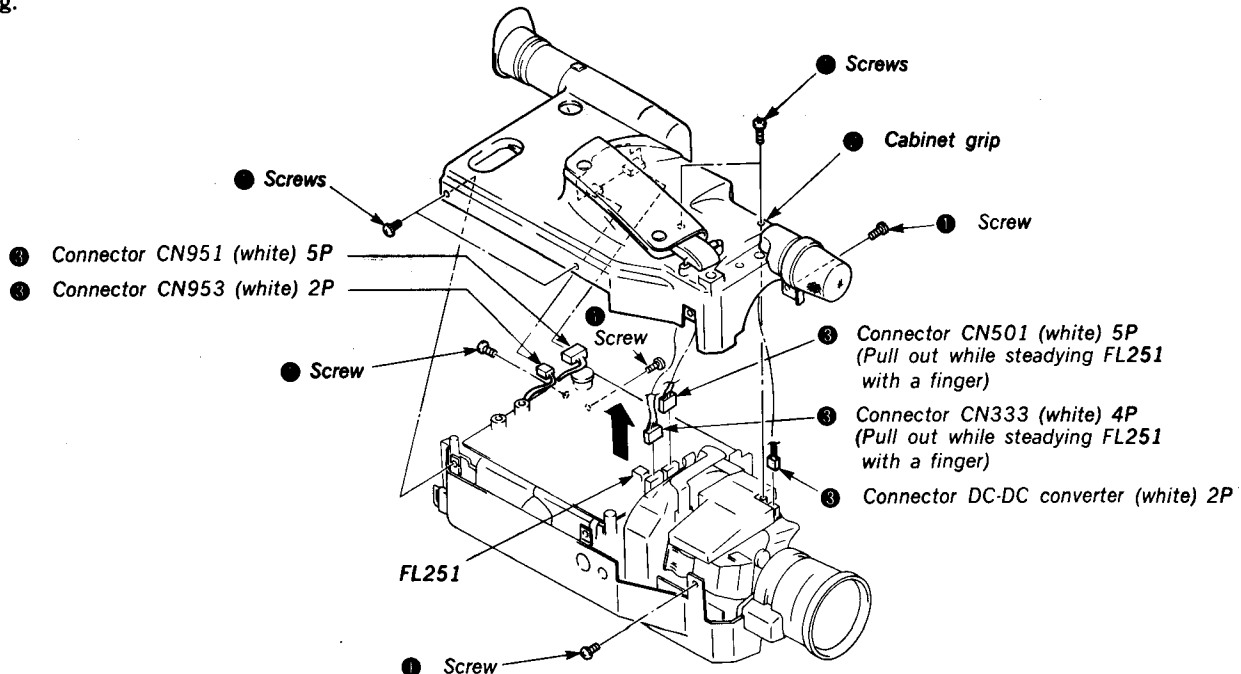
- 3) Remove a screw ⑤.
- 4) Remove upper cabinet in the direction of the arrow B.
- 5) Remove FP-63 flexible board ⑥ from a flexible connector (CN153) ⑦.



2-2. REMOVAL OF CABINET GRIP

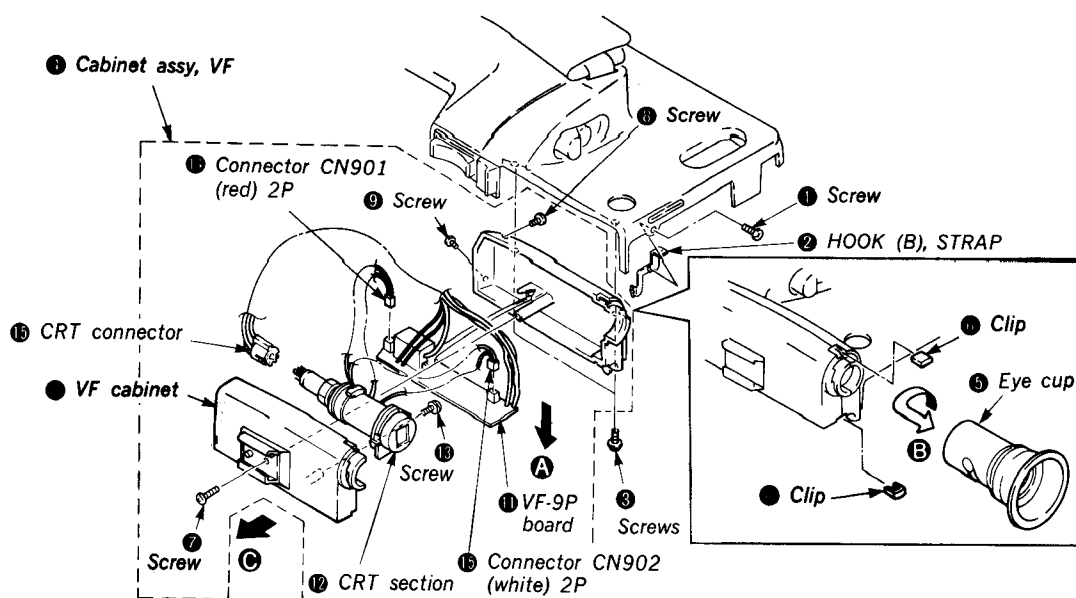
- 1) Remove eight screws ①.
- 2) Remove cabinet grip ② in the direction of the arrow.
- 3) Remove five connectors (CN333, CN501, CN951, CN953, DC-DC converter ③).

Note) When installing cabinet grip, set the harness as it was before removing.



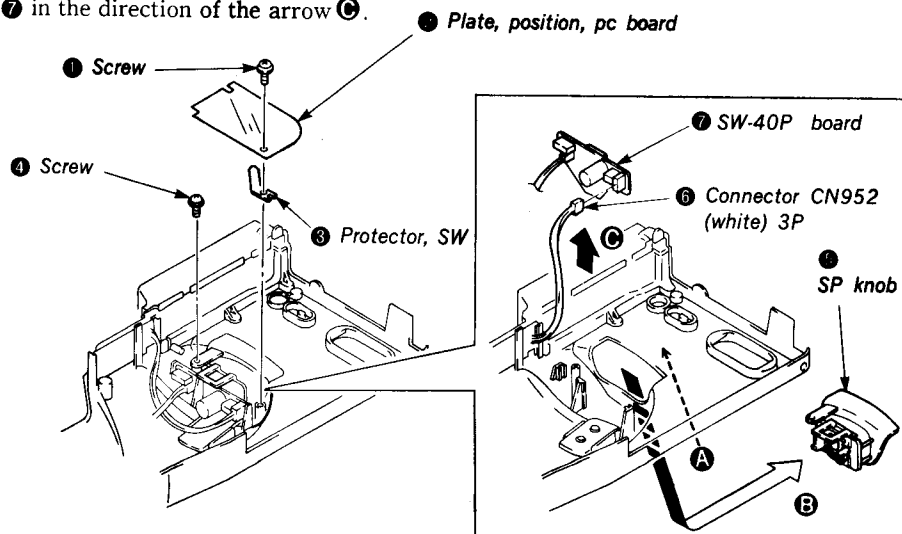
2-3. REMOVAL OF VF-9P BOARD AND CRT SECTION

- 1) Remove a screw ①.
- 2) Remove hook (B), strap ②.
- 3) Remove a screw ③.
- 4) Remove cabinet assy, VF ④ in the direction of the arrow A.
- 5) Remove eye cup ⑤ in the direction of the arrow B.
- 6) Remove two clips ⑥.
- 7) Remove a screw ⑦.
- 8) Remove a screw ⑧.
- 9) Remove a screw ⑨.
- 10) Remove VF cabinet ⑩ in the direction of the arrow C.
- 11) Remove VF-9P board ⑪ from VF cabinet ⑩.
- 12) Remove CRT section ⑫ by taking out a screw ⑬.
- 13) Remove two connectors (CN901, CN902) ⑭.
- 14) Remove CRT connector ⑮.



2-4. REMOVAL OF SW-40P BOARD

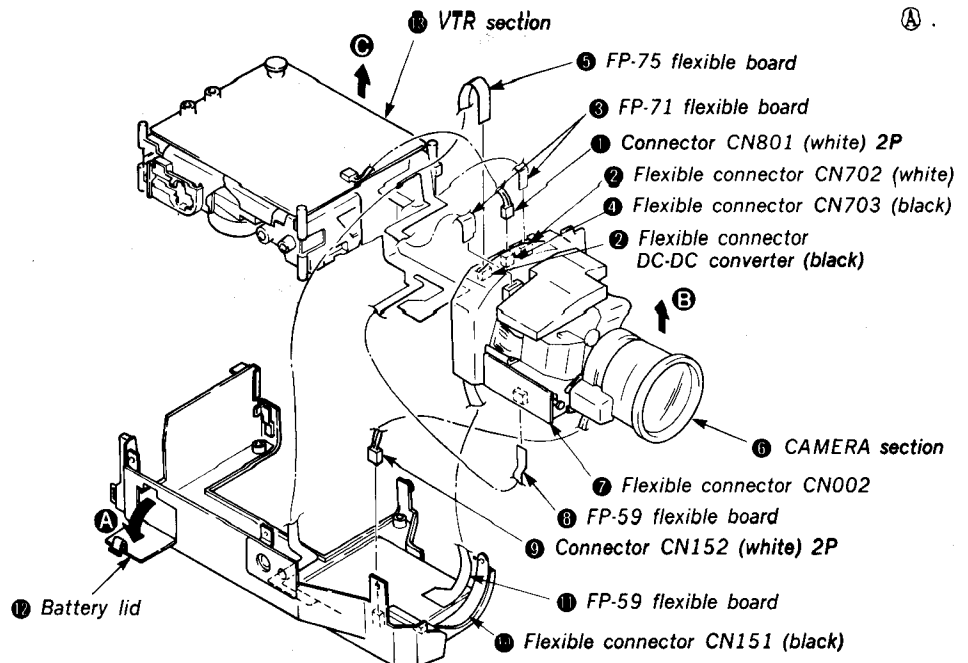
- 1) Remove a screw ①.
- 2) Remove a claw ②.
- 3) Remove a screw ④.
- 4) SP knob ⑤ can be easily removed by pushing up portion A of cabinet with a finger.
- 5) Remove SP knob ⑤ in the direction of the arrow B.
- 6) Remove connector (CN952) ⑥.
- 7) Remove SW-40P board ⑦ in the direction of the arrow C.



2-5. SEPARATION OF CAMERA SECTION AND VTR SECTION

- 1) Remove connector (CN801) ① .
- 2) Remove FP-71 flexible connector from two flexible connectors (CN702, DC-DC converter) ② .
- 3) Remove FP-75 flexible connector from flexible connector (CN703) ④ .
- 4) Remove CAMERA section ⑥ in the direction of the arrow ③ .

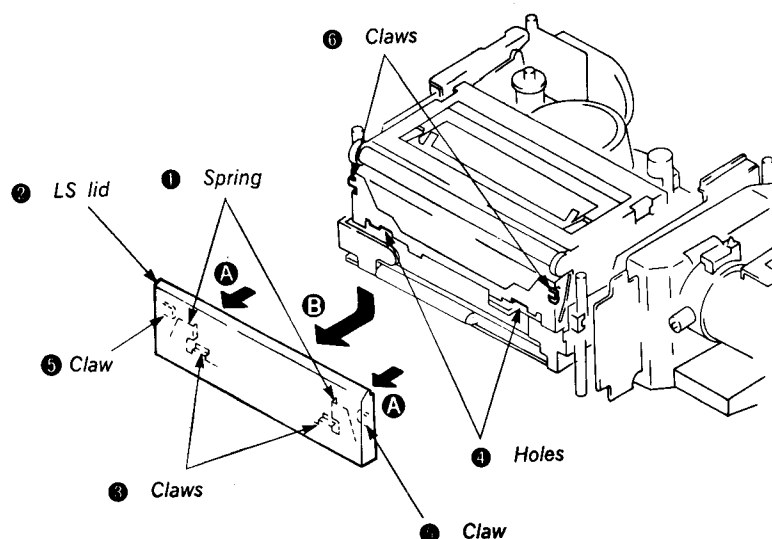
- 5) Remove FP-59 flexible board ⑧ from a flexible connector (CN002) ⑦ .
- 6) Remove connector CN152 ⑨ .
- 7) Remove FP-59 flexible board ⑪ from flexible connector (CN151) ⑩ .
- 8) Open battery lid ⑫ in the direction of the arrow ⑤ .
- 9) Remove VTR section ⑬ in the direction of the arrow ④ .



2-6. REMOVAL OF LS LID

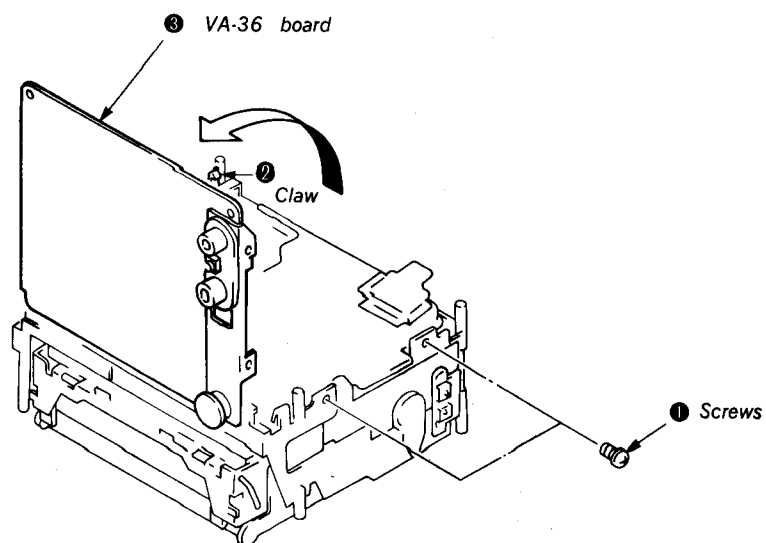
- 1) Insert a screwdriver into springs ① and push in the direction of the arrow ⑤, and then remove LS lid ② in the direction of the arrow ③.

Note) When installing the LS lid, set two claws ③ into each two holes ④ and set two claws ⑤ back to with each two claws ⑥.



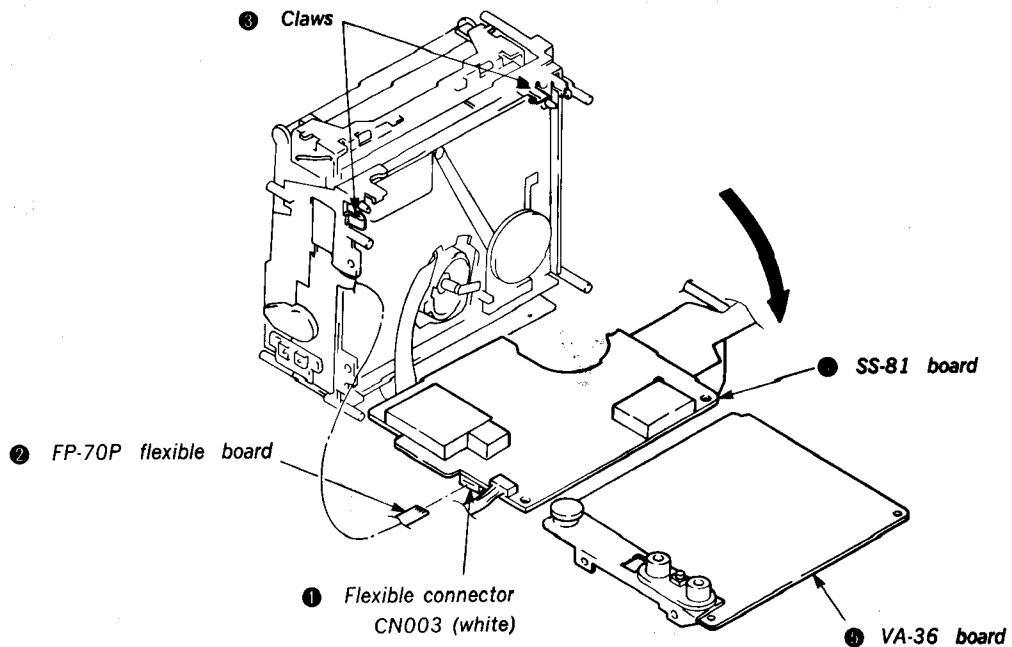
2-7. OPENING OF VA-36 BOARD

- 1) Remove two screws ❶.
- 2) Unhook a claw ❷.
- 3) Open VA-36 board ❸ in the direction of the arrow.



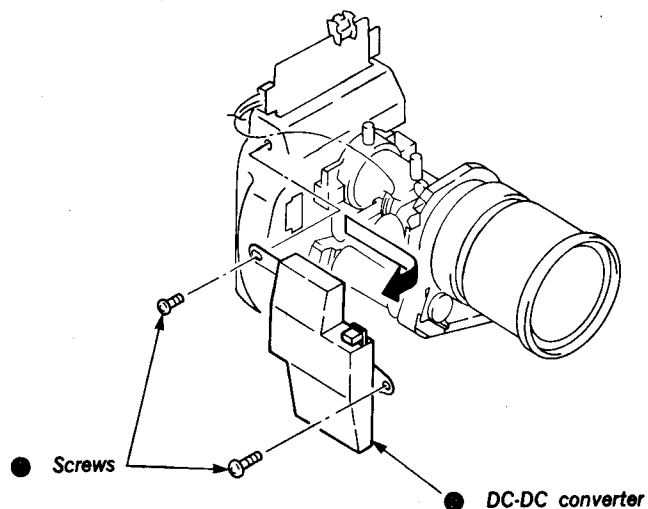
2-8. OPENING OF SS-81 BOARD

- 1) Remove FP-70P flexible board ② from flexible connector (CN003) ①.
- 2) Unhook two claws ③, open SS-81 board ④ and VA-36 board ⑤ in the direction of the arrow.



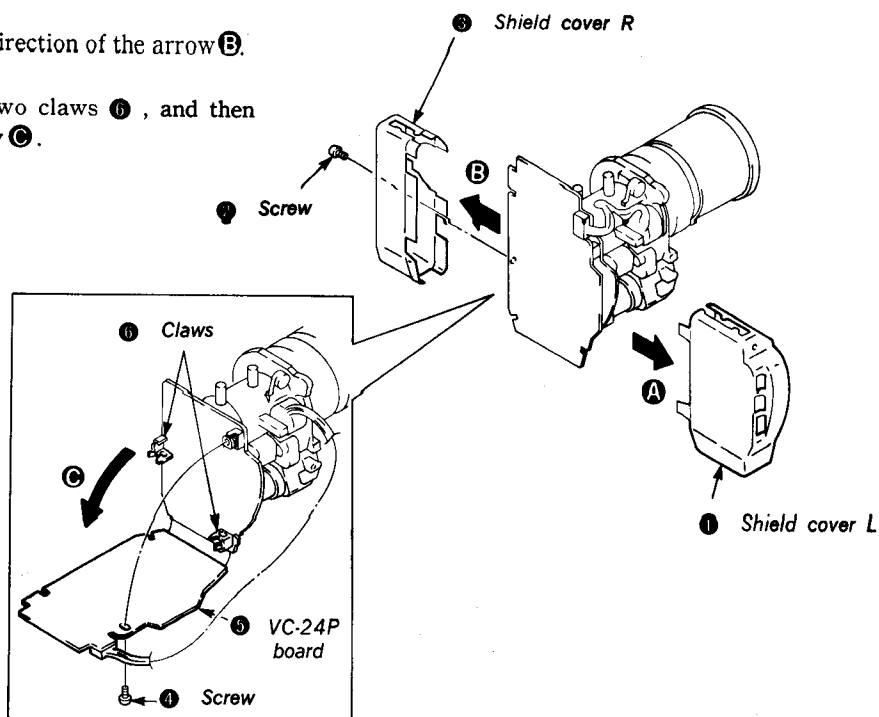
2-9. REMOVAL OF DC-DC CONVERTER

- 1) Remove two screws ①.
- 2) Slide DC-DC converter ② in the direction of the arrow, and then remove it.



2-10. OPENING OF VC-24P BOARD

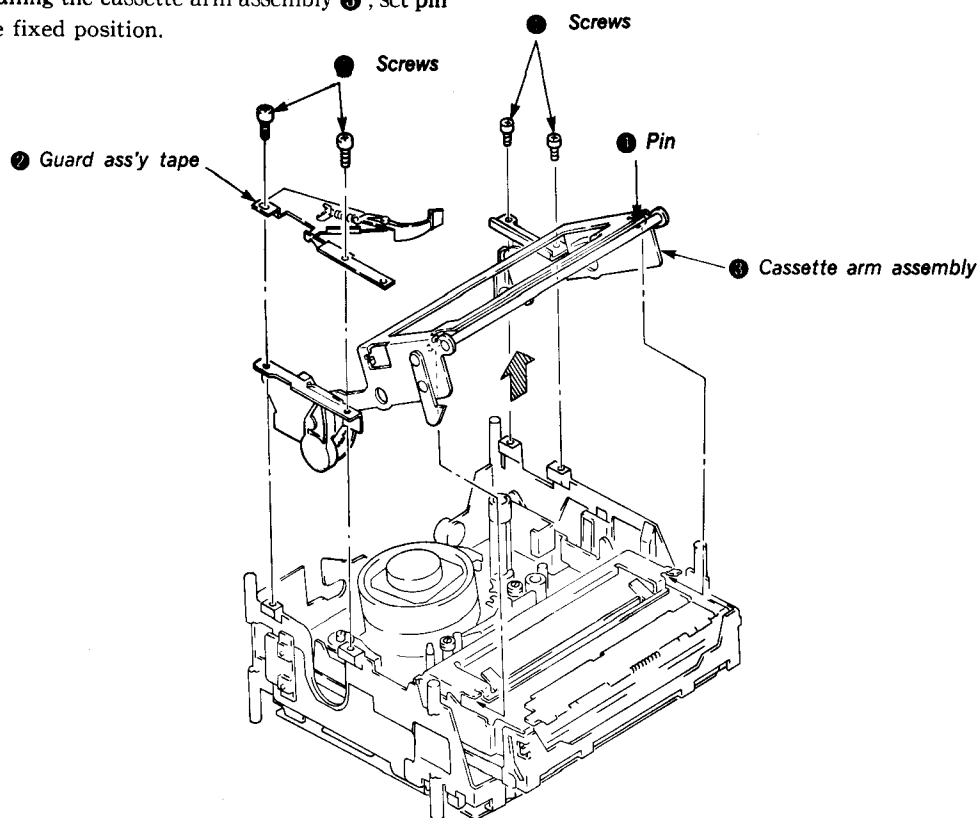
- 1) Remove shield cover L ① in the direction of the arrow A.
- 2) Remove a screw ②.
- 3) Remove shield cover R ③ in the direction of the arrow B.
- 4) Remove a screw ④.
- 5) Unhook VC-24P board ⑤ from two claws ⑥, and then open in the direction of the arrow C.



2-11. REMOVAL OF CASSETTE ARM ASSEMBLY

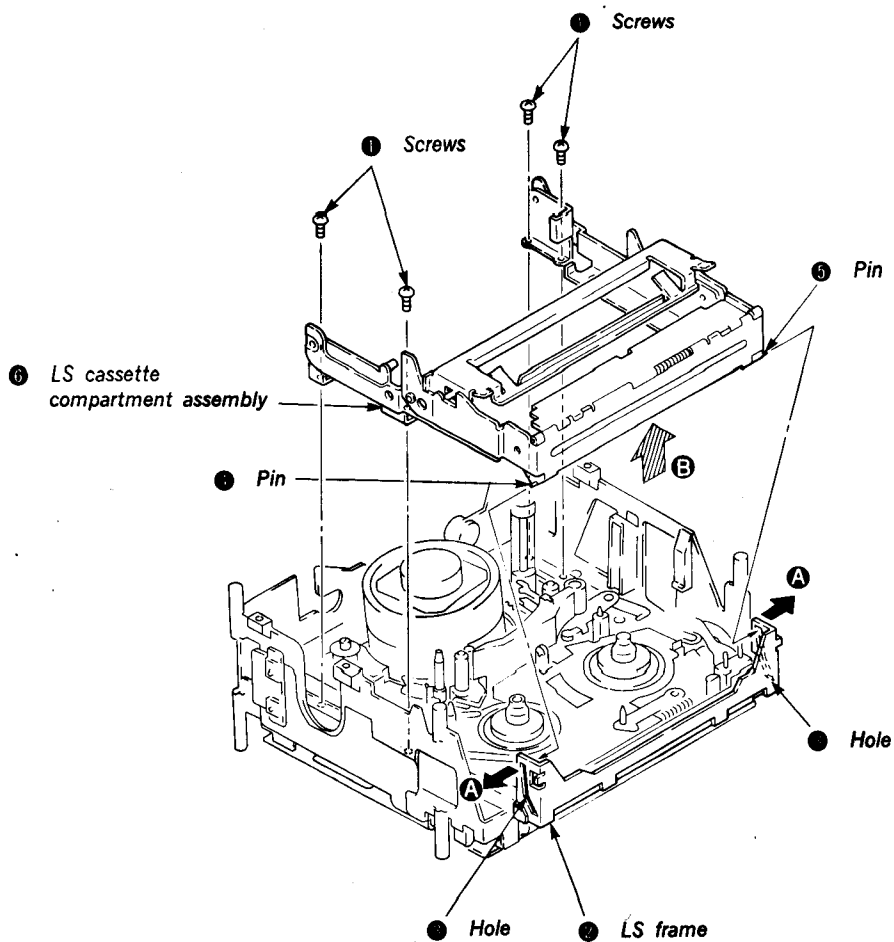
- 1) Remove four screws ① and Guard ass'y tape ②.
- 2) Remove cassette arm assembly ③ in the direction of the arrow.

Note) When installing the cassette arm assembly ③, set pin ④ into the fixed position.

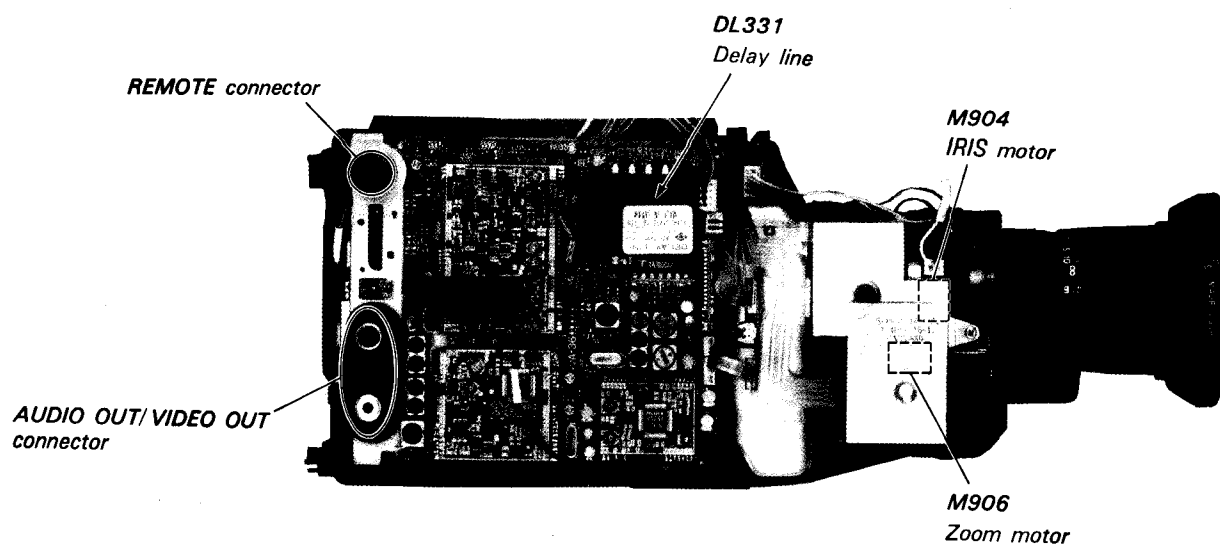
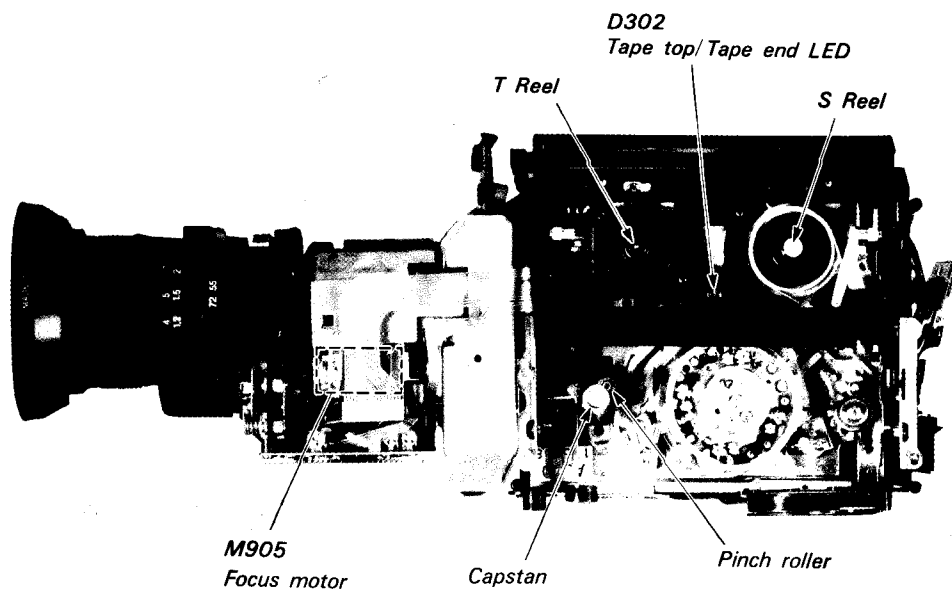


2-12. REMOVAL OF LS CASSETTE COMPARTMENT ASSEMBLY

- 1) Remove four screws ① .
- 2) Take pin ④ and pin ⑤ out of the slits ③ of LS frame by pushing slit portions ③ in the direction of the arrow A (Remove pin ④ first, because it is rather shorter than pin ⑤).
- 3) Remove LS cassette compartment ⑥ in the direction of the arrow B .

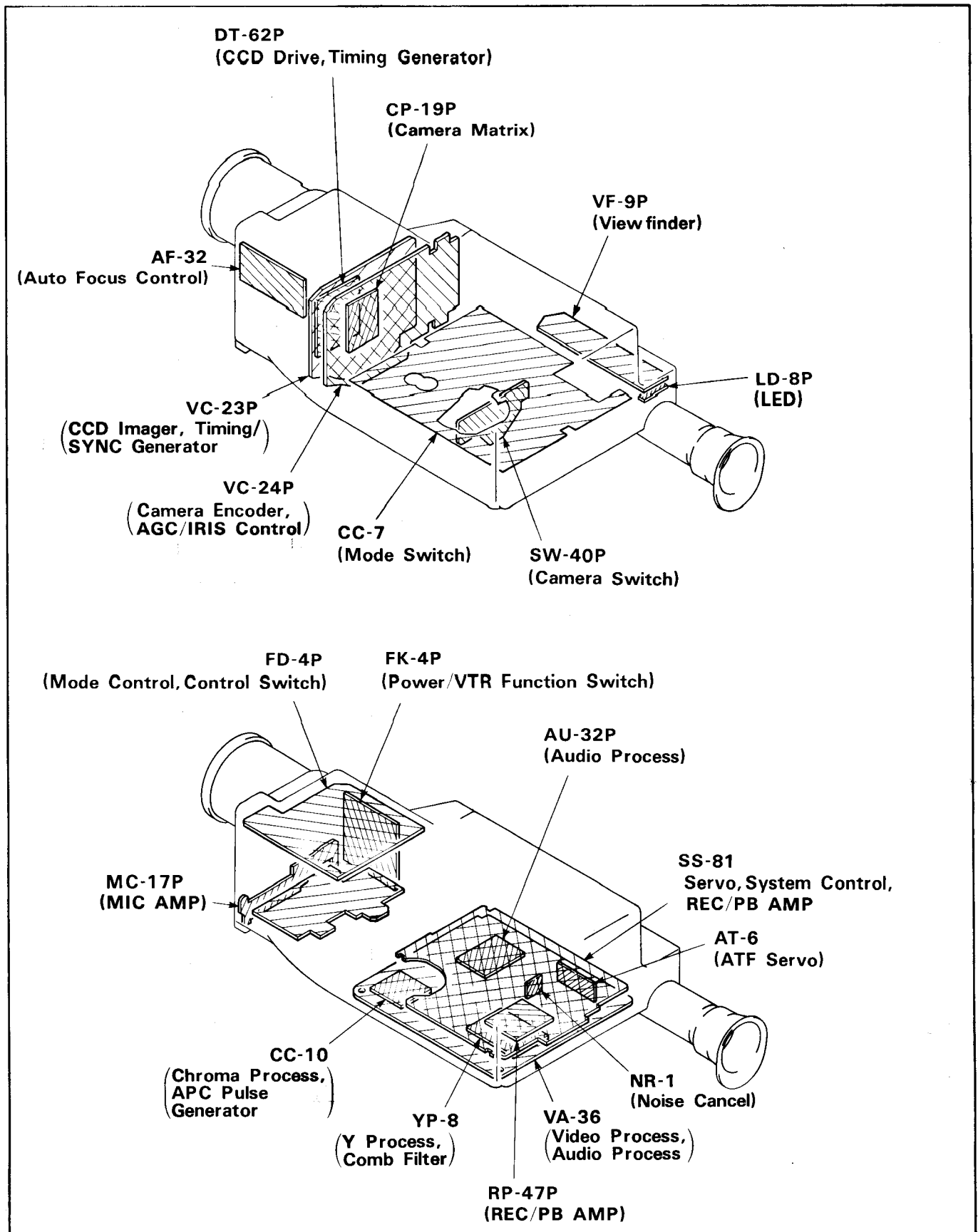


2-13. INTERNAL VIEWS

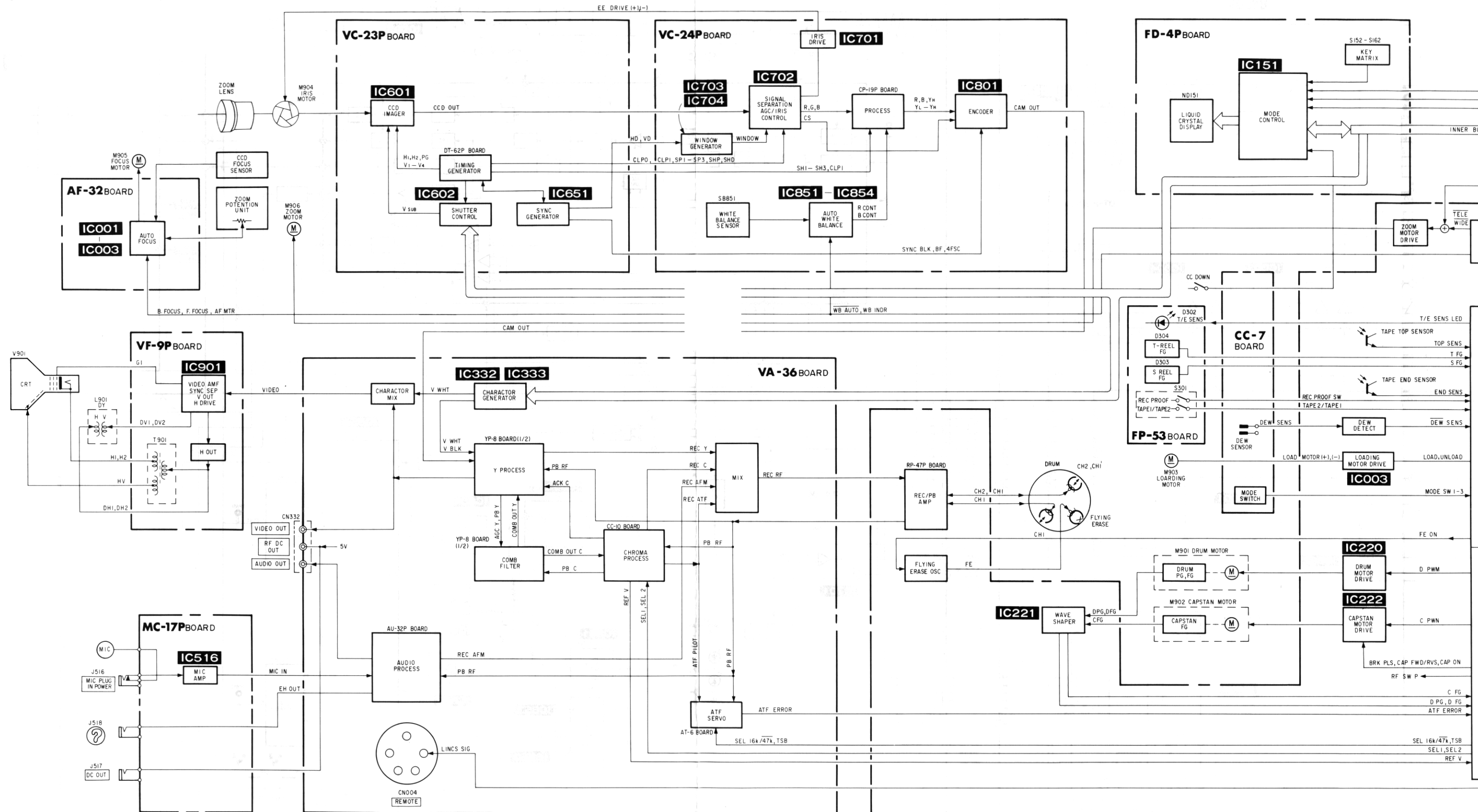


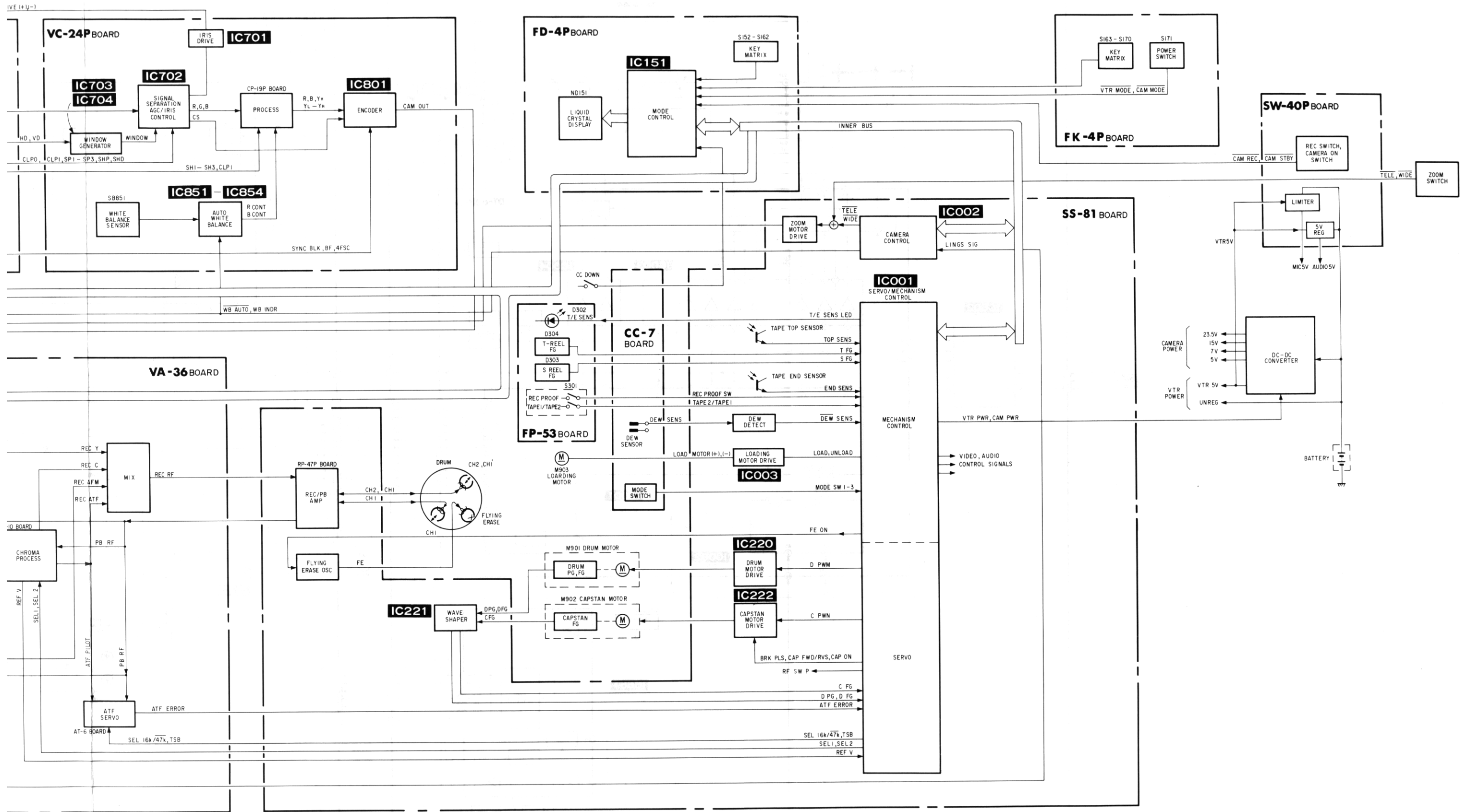
SECTION 3 DIAGRAM

3-1. CIRCUIT BOARDS LOCATION

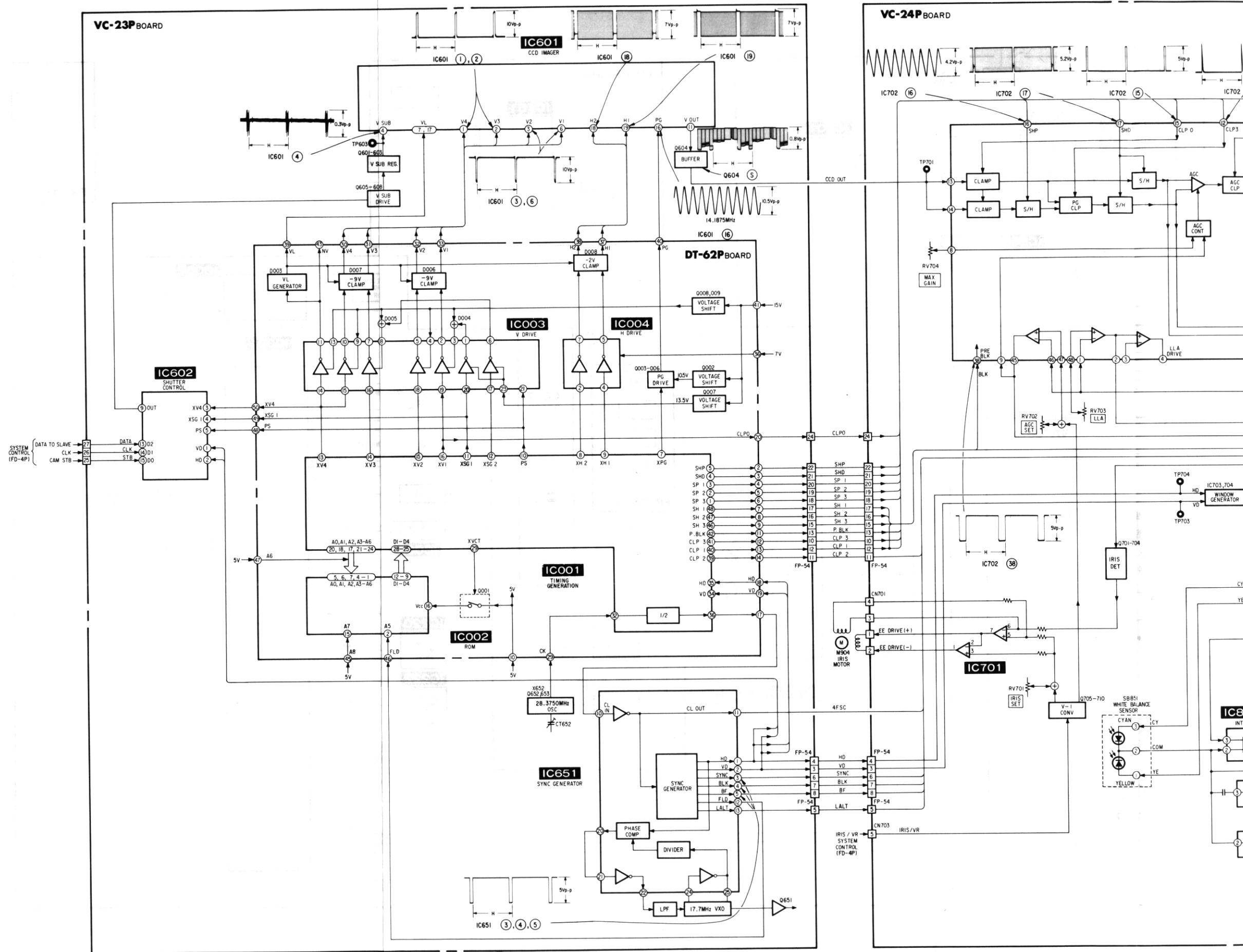


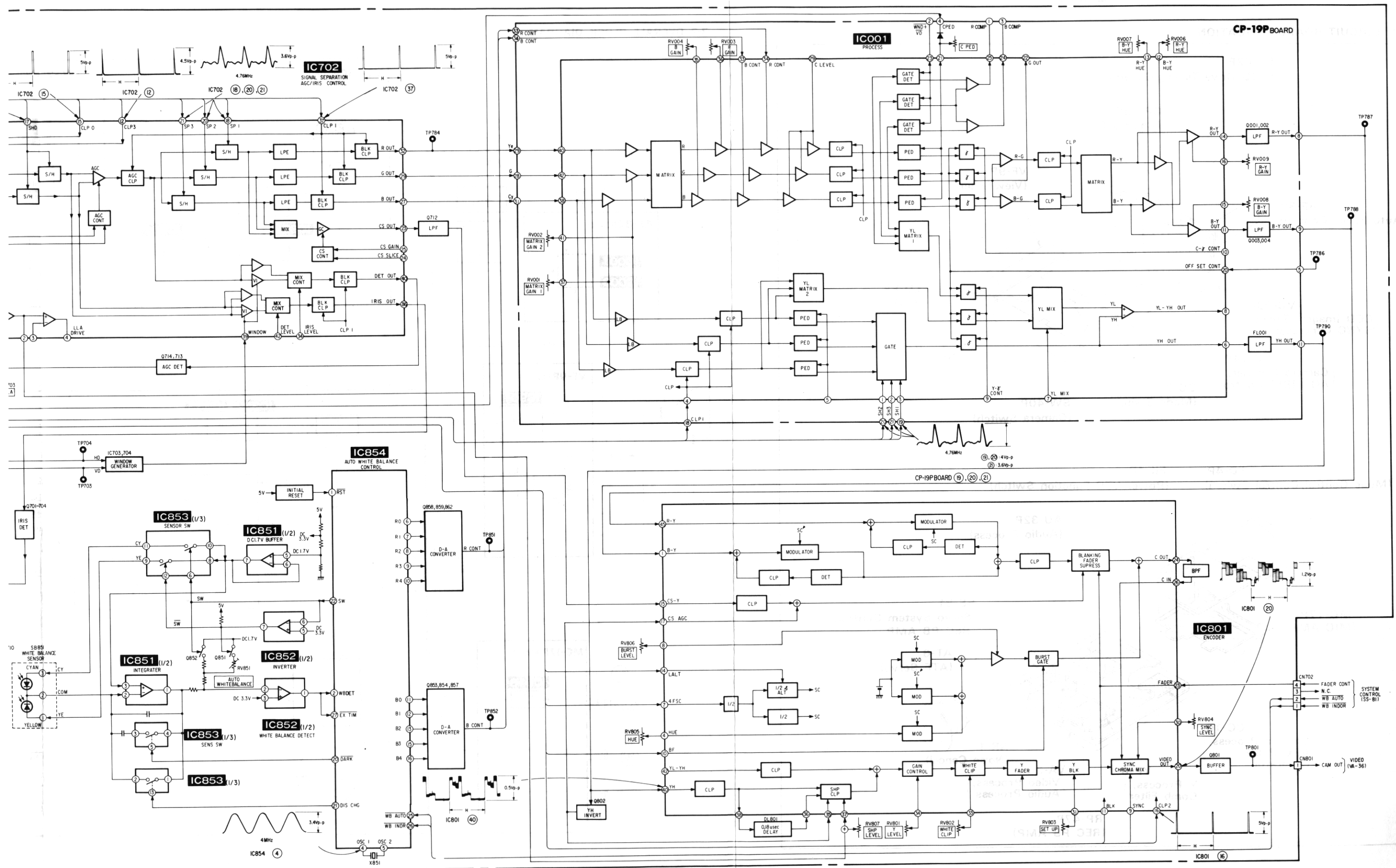
3-2. OVERALL BLOCK DIAGRAM



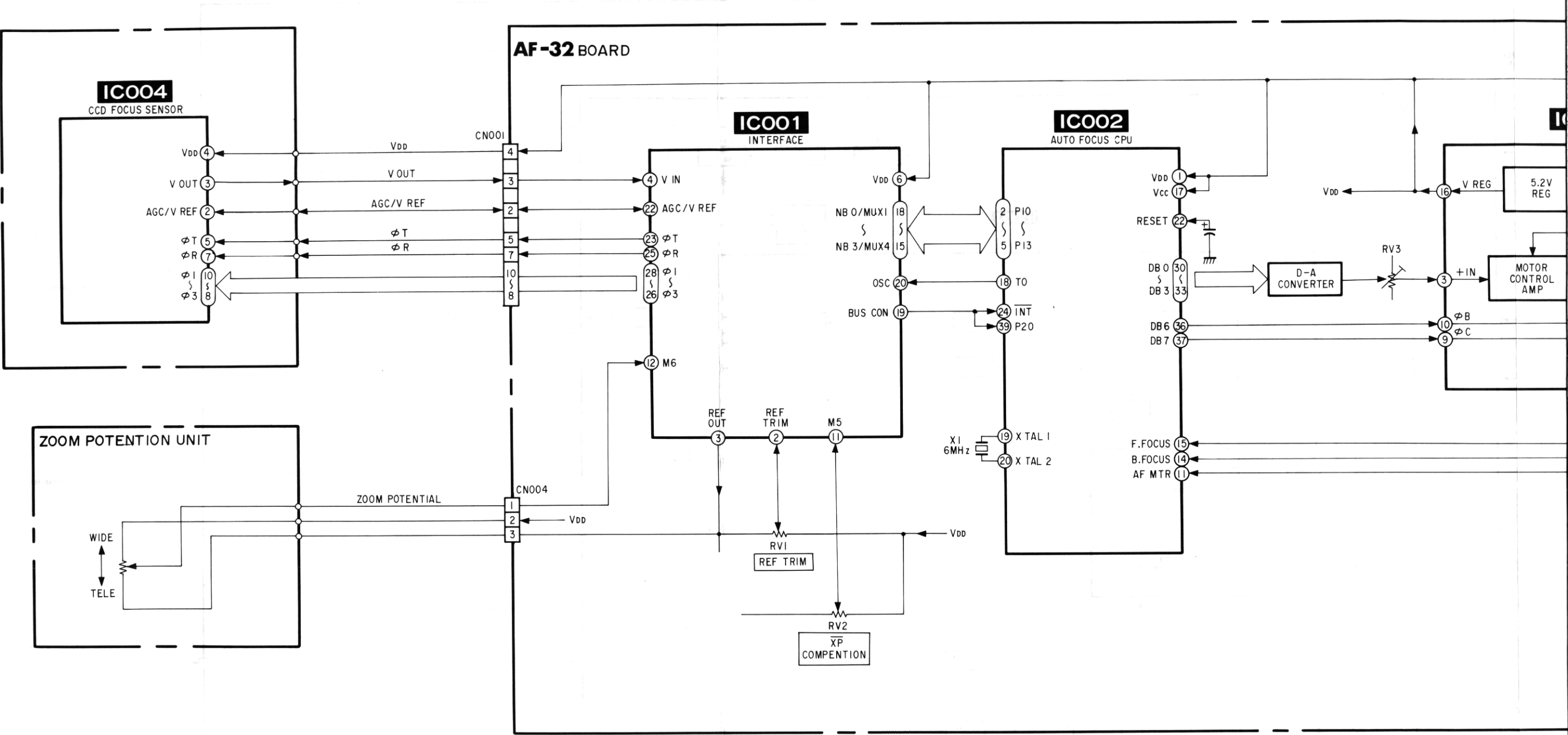


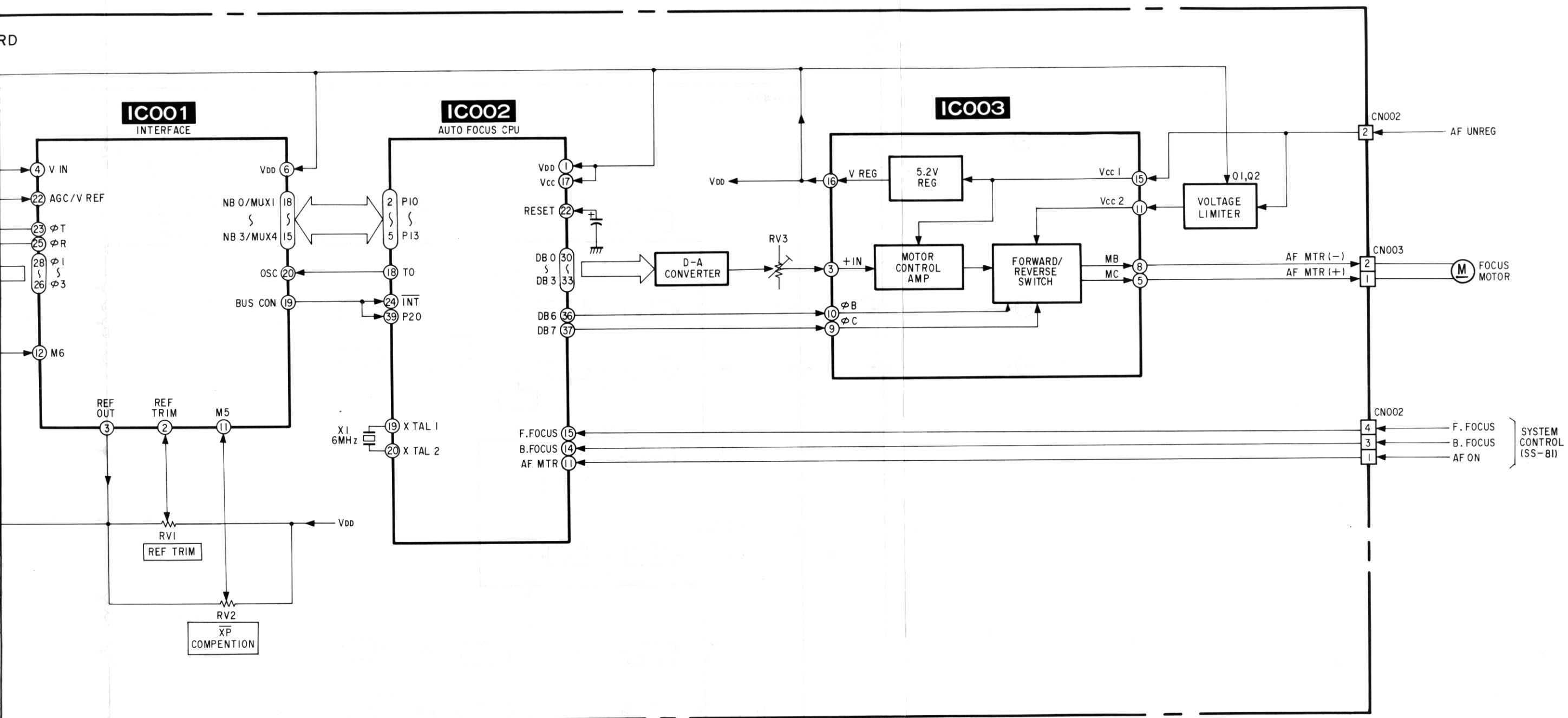
3-3. CAMERA BLOCK DIAGRAM



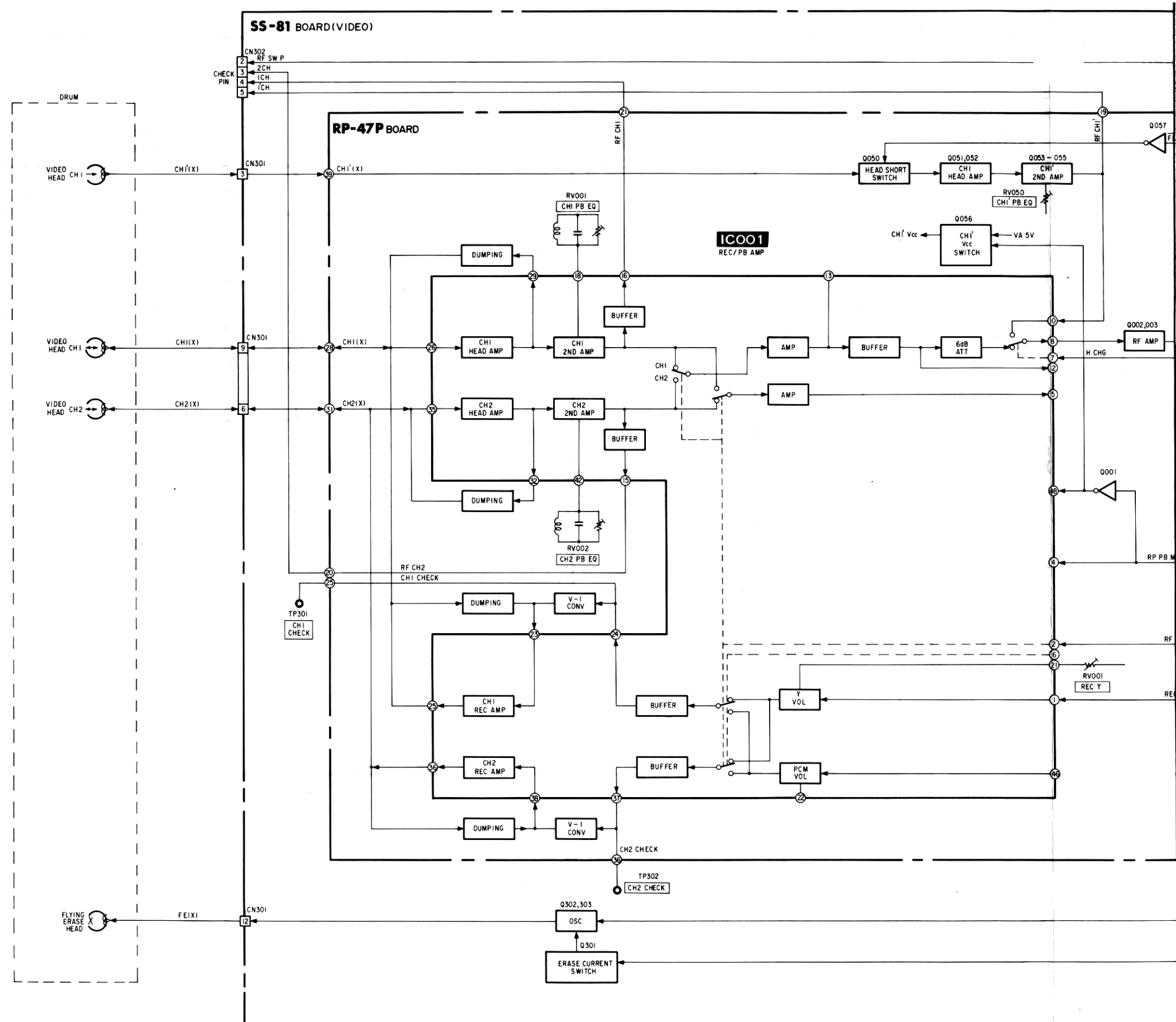


3-4. AUTO FOCUS BLOCK DIAGRAM

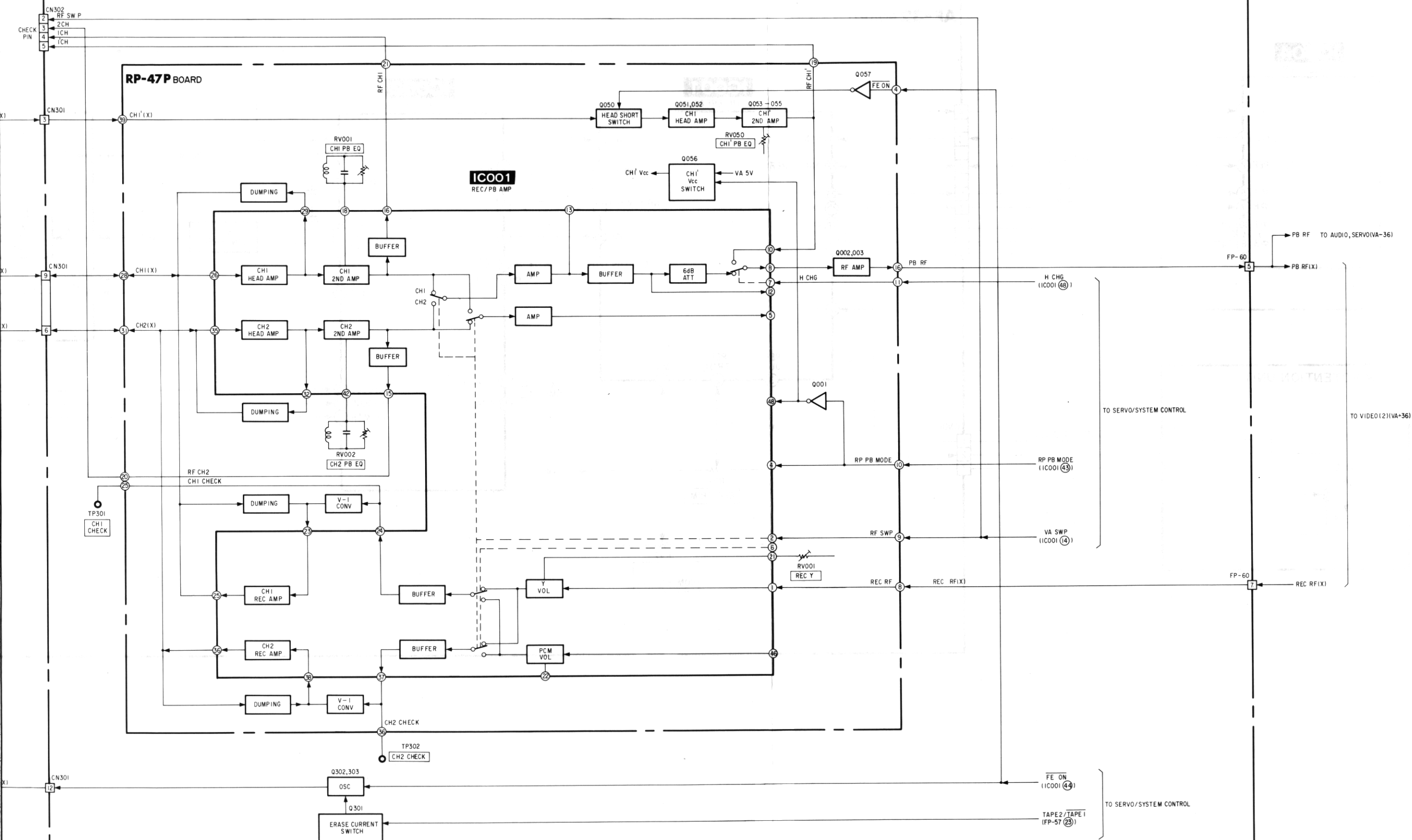




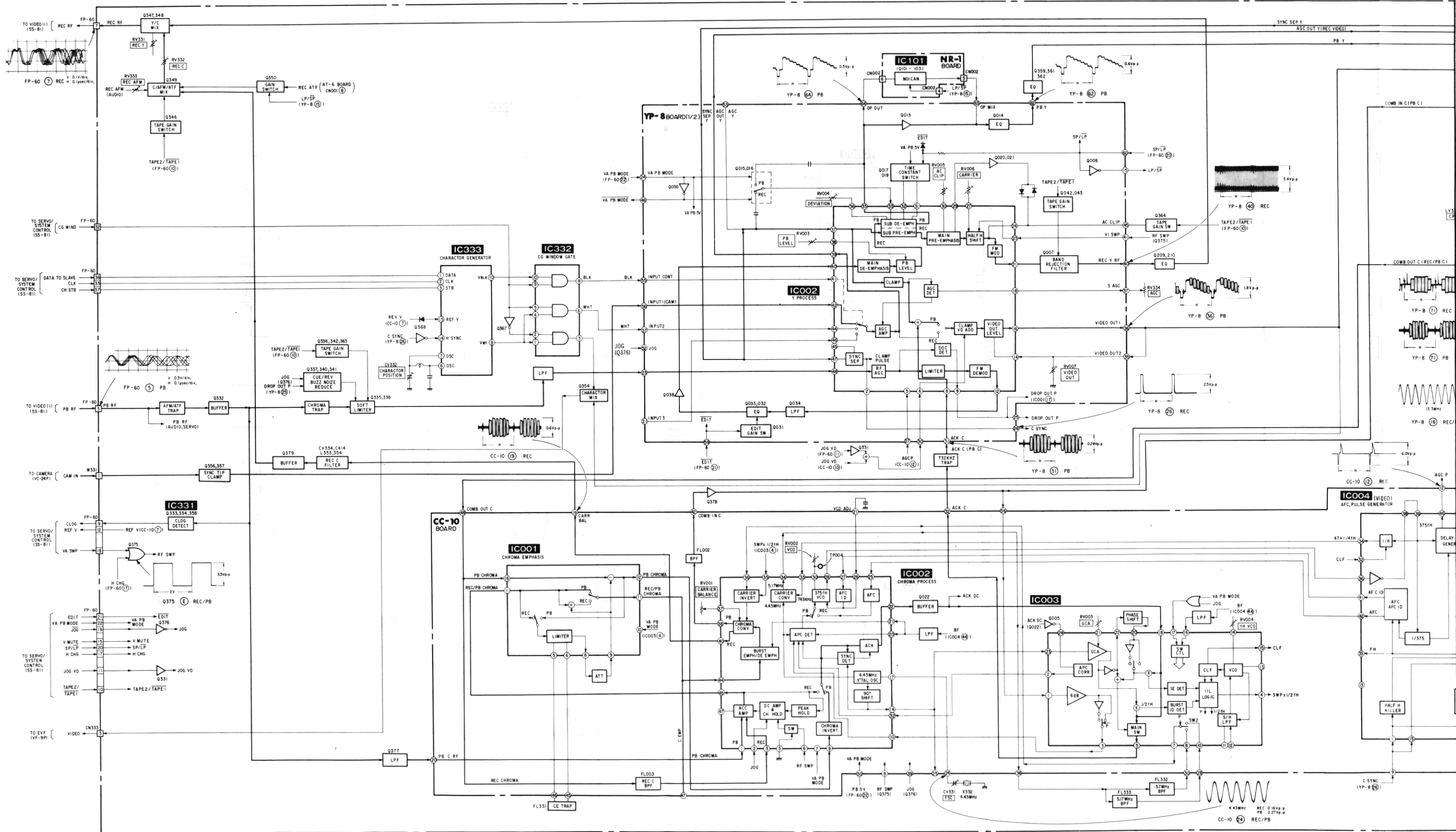
3-5. VIDEO(1) BLOCK DIAGRAM



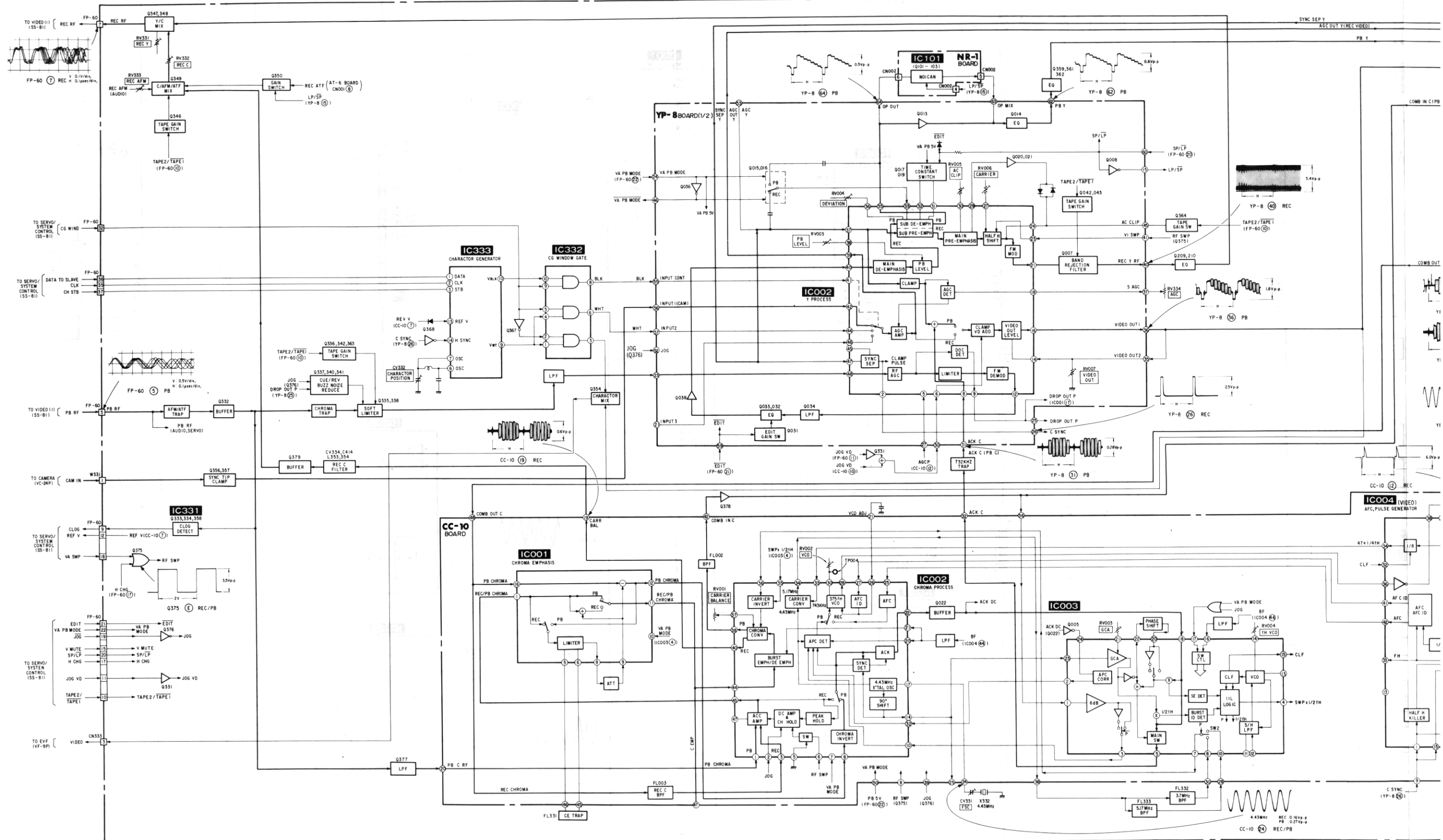
SS-81 BOARD (VIDEO)

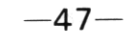
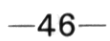


3-6. VIDEO (2) BLOCK DIAGRAM

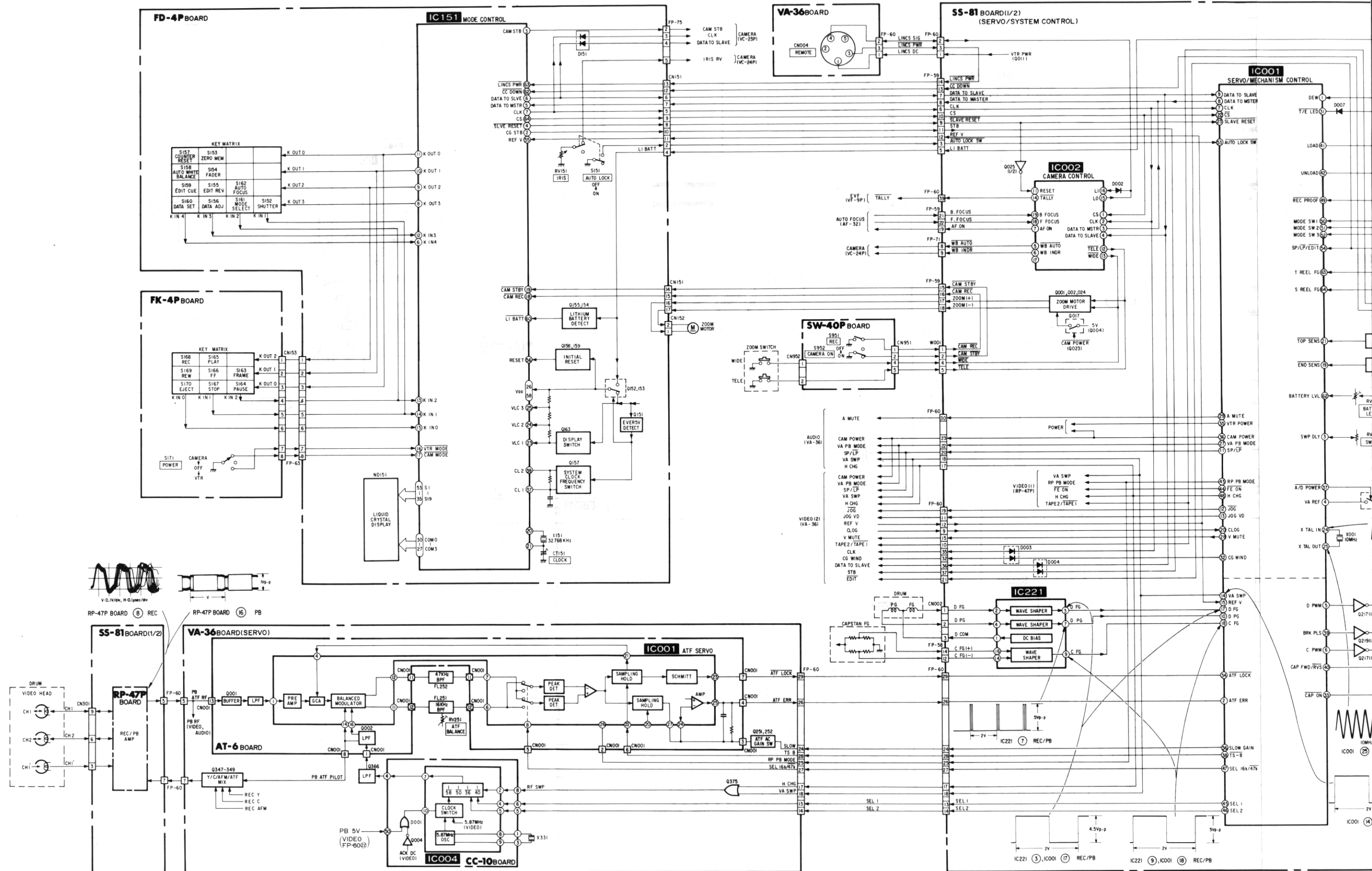


3-6. VIDEO (2) BLOCK DIAGRAM

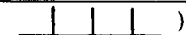




3-7. SERVO, SYSTEM CONTROL BLOCK DIAGRAM



3-8. SYSTEM CONTROL—CAMERA BLOCK INTERFACE

Signal	I/O	Pin No.	Input/Output Level															
WB AUTO	O	SS-81board IC002 ⑤	Changes as follows according to auto white balance button (FD-4P board S158). <table><tr><td>EVF display</td><td>(AUTO)</td><td>OUT DOOR</td><td>IN DOOR</td></tr><tr><td>WB AUTO</td><td>L</td><td>H</td><td>H</td></tr><tr><td>WB INDR</td><td>H</td><td>H</td><td>L</td></tr></table>	EVF display	(AUTO)	OUT DOOR	IN DOOR	WB AUTO	L	H	H	WB INDR	H	H	L			
EVF display	(AUTO)	OUT DOOR		IN DOOR														
WB AUTO	L	H		H														
WB INDR	H	H	L															
WB INDR	O	SS-81board IC002 ⑥																
AF ON	O	SS-81board IC002 ⑦	"H" when auto focus is ON.															
TELE	O	SS-81board IC002 ⑫	"L" when zoom switch TELE of Remote Commander is pressed.															
WIDE	O	SS-81board IC002 ⑬	"L" when zoom switch WIDE of Remote Commander is pressed.															
TALLY	O	SS-81board IC002 ⑭	"L" when in CAMERA mode and REC mode.															
F FOCUS	I	SS-81board IC002 ⑱	Changes as follows according to results. <table><tr><td></td><td>Focus too close</td><td>Just focus</td><td>Focus too far</td><td>Impossible to measure</td></tr><tr><td>F FOCUS</td><td>L</td><td>L</td><td>H</td><td>H</td></tr><tr><td>B FOCUS</td><td>H</td><td>L</td><td>L</td><td>H</td></tr></table>		Focus too close	Just focus	Focus too far	Impossible to measure	F FOCUS	L	L	H	H	B FOCUS	H	L	L	H
	Focus too close	Just focus		Focus too far	Impossible to measure													
F FOCUS	L	L	H	H														
B FOCUS	H	L	L	H														
B FOCUS	I	SS-81board IC002 ⑲																
CAM STB	O	FD-4P board IC151 ③	4V cycle "H" pulse. () Strobe signal for serial data transmission.															
CLK	O	FD-4P board IC151 ⑦	2V cycle "L" Pulse series. () Serial data transmission clock.															
DATA TO SLAVE	O	FD-4P board IC151 ⑥	2V cycle pulse series. () Serial data transmission.															

3-9. SYSTEM CONTROL—VIDEO,AUDIO BLOCK INTERFACE

Signal	I/O	Pin No.	VTR mode										CAMERA mode			
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB-PAUSE	FRAME	STAND-BY	EDIT CUE	EDIT REVIEW	REC
						CUE	REVIEW		CUE	REVIEW						
SP/LP	O	SS-81board IC001⑪	* 11	* 11	* 11	* 1	* 1	* 2	* 1	* 1	* 1	* 1	* 11	* 11	* 11	* 11
JOG	O	SS-81board IC001⑫	H	H	H	L	L	H	L	L	L	L	H	L	L	H
JOG VD	O	SS-81board IC001⑬	L	L	L	* 3	* 3	L	* 3	* 3	* 3	* 3	L	* 3	* 3	L
RF SWP	O	SS-81board IC001⑭	H/L	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
REF V	O	SS-81board IC001⑮	* 5	* 5	* 5	L	L	L	L	L	L	L	* 5	L	L	* 5
CLOG	I	SS-81board IC001⑯	H	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6		* 6	* 6	H
VA PB MODE	O	SS-81board IC001⑰	L	L	L	H	H	H	H	H	H	H	L	H	H	L
V MUTE	O	SS-81board IC001⑱	L	L	L	L	L	L * 7	L	L	L	L	L	L	L	L
A MUTE	O	SS-81board IC001⑲	L	L	L	H	H	L * 7	H	H	H	H	L	H	H	L
CG WIND	O	SS-81board IC001㉒	H	H	H	H	H	H	H	H	H	H	* 8	* 8	* 8	* 8
CAM PWR	O	SS-81board IC001㉔	L	L	L	L	L	L	L	L	L	L	H	H	H	H
H CHG	O	SS-81board IC001⑳	L	L	L	L	L	L	L	L	* 9	* 9	L	L	L	L
RP PB MODE	O	SS-81board IC001㉓	H	H	H	H	H	H	H	H	H	H	H	H	H	L
FE ON	O	SS-81board IC001㉕	H	H	H	H	H	H	H	H	H	H	H	H	H	L
TAPE2/TAPE1	O	FP-53board S301	"L" when using MP type tape.													
EDIT	O	FP-57board S953	"L" when EDIT switch (FP-57 board S953) is turuned ON.													
DATA TO SLAVE	O	FD-4P board IC151 ⑥	V cycle "L" pulse series (VTR mode)										"L" pulse series (CAMERA mode)			
CLK	O	FD-4P board IC151 ⑦	V cycle "L" pulse series (VTR mode)										"L" pulse series (CAMERA mode)			
CG STB	O	FD-4P board IC151 ②	L	L	L	L	L	L	L	L	L	L	* 10	* 10	* 10	* 10

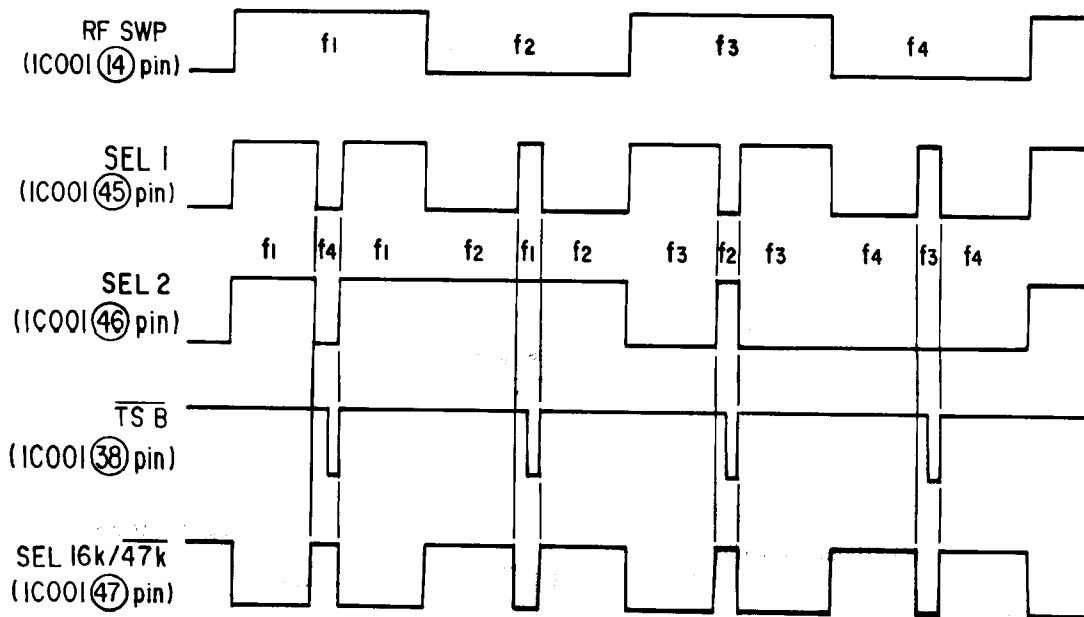
- * 1 Outputs identification results is PB mode immediately preceding. SP mode "H" , LP mode "L" .
- * 2 Outputs identification results of playback tape recording mode (SP/LP). SP mode "H" , LP mode "L" .
- * 3 False VD signal (V cylce "H" pulse)
- * 4 25Hz 50% duty pulse. Synchronized to drum rotation.
- * 5 V cycle "L" pulse separated from camera video signal.
- * 6 "H" at tape no signal portion or dropout portion. Input for head clogging detection.
- * 7 "H" at tape no signal portion.
- * 8 V cycle pulse
- * 9 2V cycle pulse ().
- * 10 2V cycle pulse series.
- * 11 By the SP/LP selector (FP-57 board S953). SP mode "H" , LP mode "L" .

3-10. SYSTEM CONTROL—SERVO PERIPHERAL CIRCUIT INTERFACE

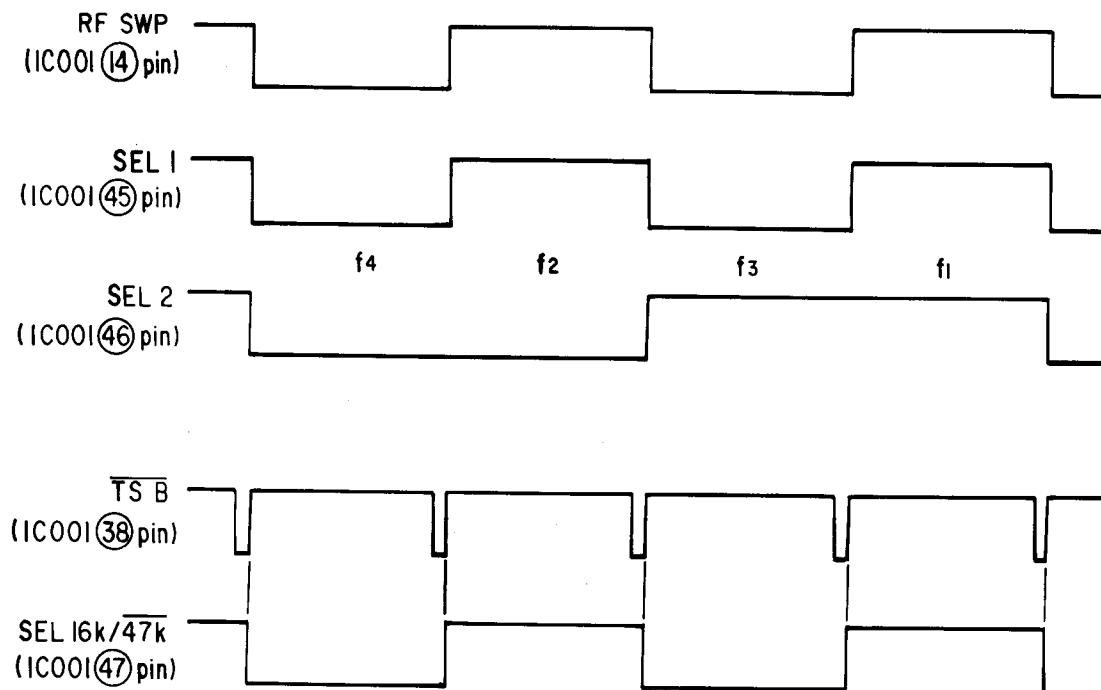
Signal	I/O	Pin No.	VTR MODE										CAMERA MODE			
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB•PAUSE	FRAME	STAND-BY	EDIT CUE	EDIT REV	REC
						CUE	REVIEW		CUE	REVIEW						
ATF ERR	I	SS-81board IC001②		* 1	* 1	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 1	
SWP DLY * 3	I	SS-81board IC001③														
D PWM	O	SS-81board IC001⑤	L	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
C PWM	O	SS-81board IC001⑥	L	* 5	* 5	* 5	* 5	* 5	* 5	* 5	L	* 5	L	* 5	* 5	* 5
D PG	I	SS-81board IC001⑩	L	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
RF SWP	O	SS-81board IC001⑭	H/L	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7
REF V	I	SS-81board IC001⑮	* 8	* 8	* 8	L	L	L	L	L	L	L	* 8	L	L	* 8
D FG	I	SS-81board IC001⑰	H	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9
C FG	I	SS-81board IC001⑱	H/L	* 10	* 10	* 11	* 12	* 13	* 11	* 12	H/L	* 14	H/L	* 13	* 13	* 13
CAP ON	O	SS-81board IC001⑲	H	L	L	L	L	L	L	L	L	L	L	L	L	L
ATF LOCK	I	SS-81board IC001⑳		H	H	H	H	L	H	H	H	H	H	L	L	H
TS B	O	SS-81board IC001㉓	H	H	H	H	H	* 15	H	H	H	H	H	* 15	* 16	H
CAP BRK	O	SS-81board IC001㉔	L	L	L	L	L	L	L	L	L	* 17	L	L	L	L
CAP FWD/RVS	O	SS-81board IC001④①	H	H	L	H	L	H	H	L	H	H	H	H	L	H
SEL1	O	SS-81board IC001④⑤	L	L	L	* 18	* 19	* 15	* 18	* 19	H	* 20	L	* 15	* 16	* 21
SEL2	O	SS-81board IC001④⑥	L	L	L	* 18	* 19	* 15	* 18	* 19	H/L	* 20	H	* 15	* 16	* 21
SEL 16K/47K	O	SS-81board IC001④⑦	L	L	L	* 18	* 19	* 15	* 18	* 19	L	* 20	L	* 15	* 16	L
SLOW GAIN	O	SS-81board IC001⑤⑤	L	L	L	L	L	L	L	L	H	H	L	L	L	L

- * 1 Fixed voltage approx. 2V DC.
- * 2 ATF error voltage
- * 3 DC voltage set by RV002 is input.
- * 4 43μsec cycle PWM wave. Duty ratio changes according to drum error signal.
- * 5 43μsec cycle PWM wave. Duty ratio changes according to capstan error signal.
- * 6 V cycle "H" pulse ()
- * 7 25Hz 50% duty pulse (). Synchronized to drum rotation.
- * 8 V cycle "L" pulse separated from camera video signal.
- * 9 600Hz pulse
- * 10 Approx. 17300Hz pulse
- * 11 Approx. 8380Hz pulse (SP mode)
- * 12 Approx. 7660Hz pulse (SP mode)
- * 13 Approx. 1152Hz pulse (SP mode)
- * 14 Pulse input during step-by-step
- * 15 Refer to Timing Chart 1
- * 16 Refer to Timing Chart 2
- * 17 "H" pulse output during step-by-step
- * 18 Refer to Timing Chart 3
- * 19 Refer to Timing Chart 4
- * 20 Pulse output during step-by-step
- * 21 Refer to Timing Chart 5

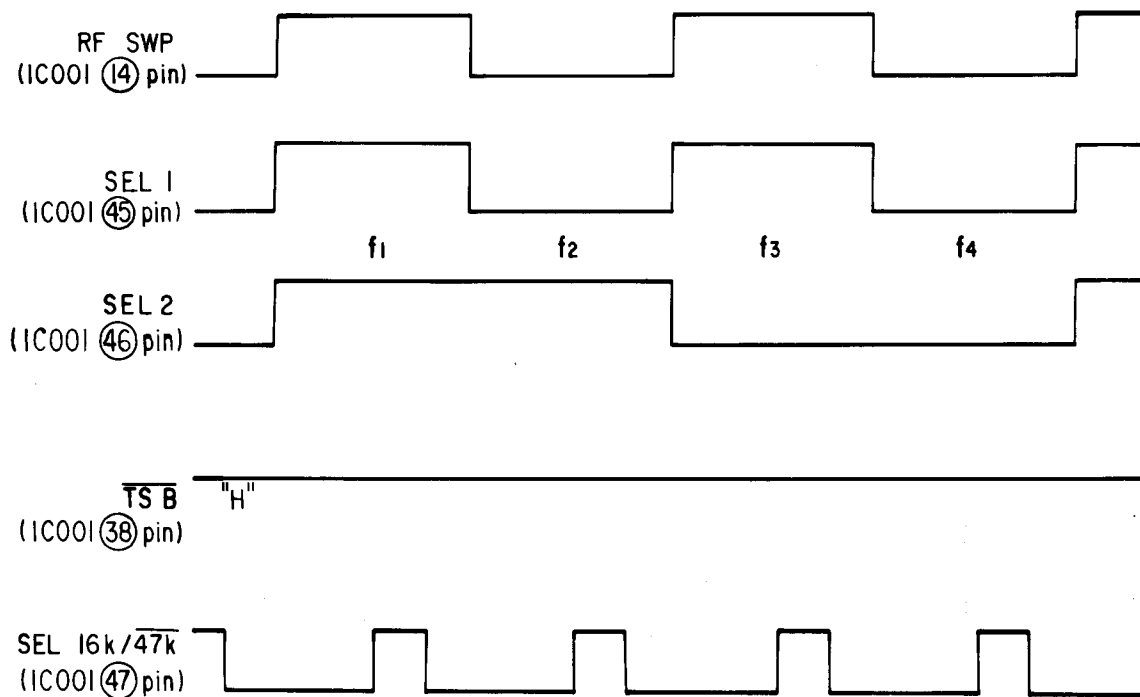
3-10-1. Timing chart 1 (PB,EDIT CUE)



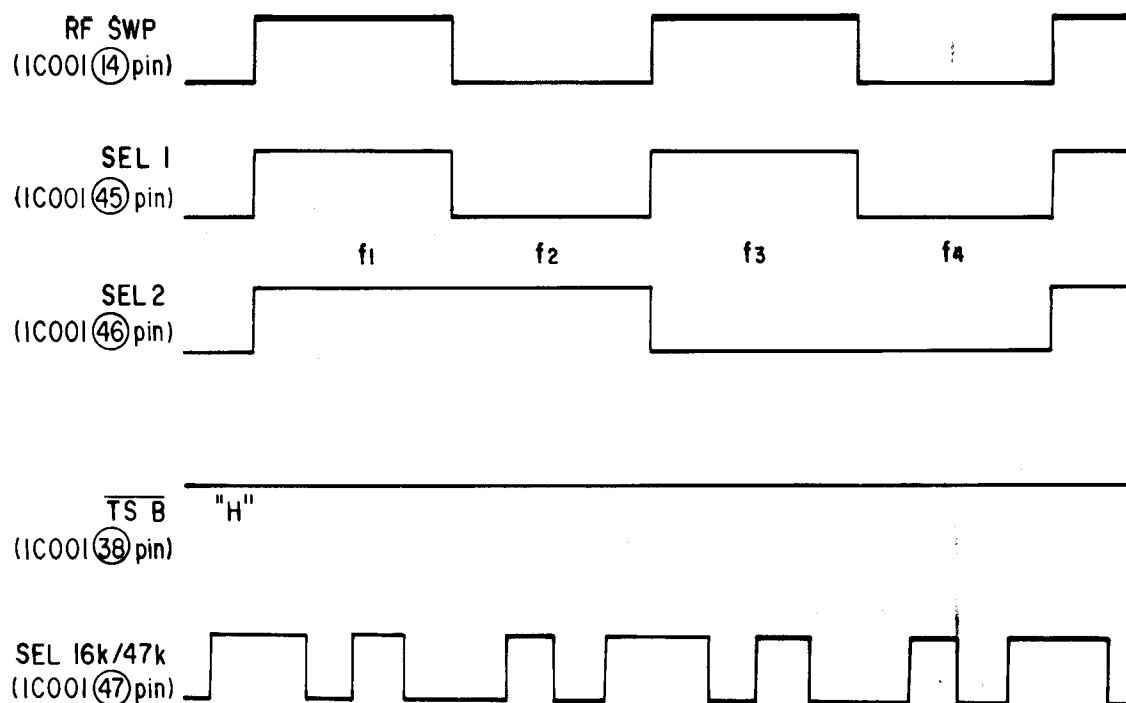
3-10-2. Timing chart 2 (EDIT REVIEW)



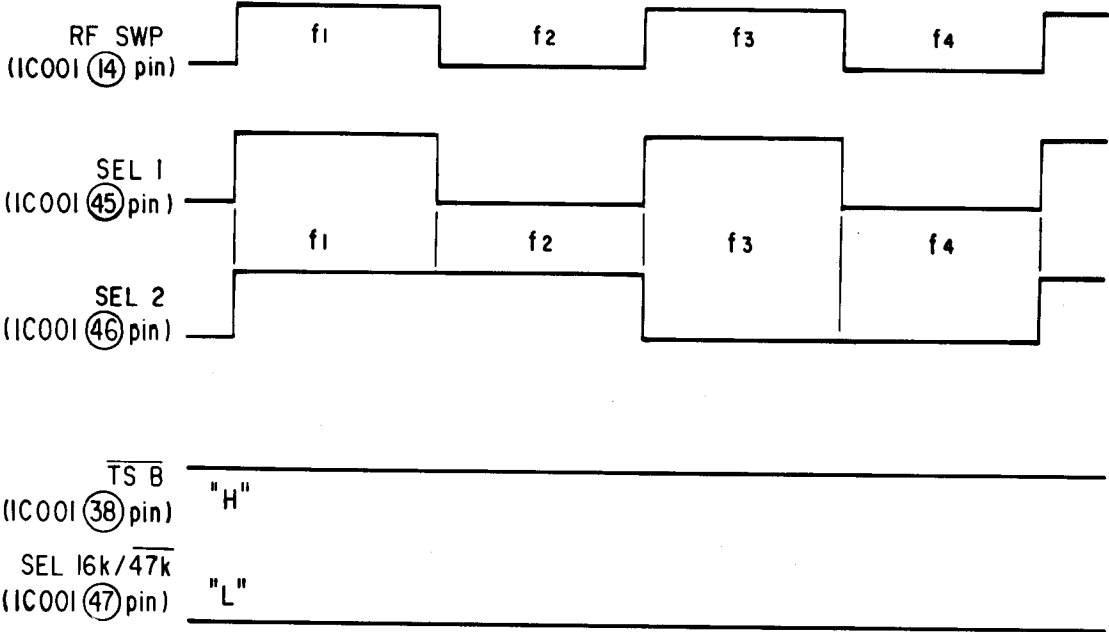
3-10-3. Timing chart 3 (CUE)



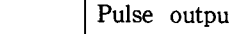
3-10-4. Timing chart 4 (REVIEW)



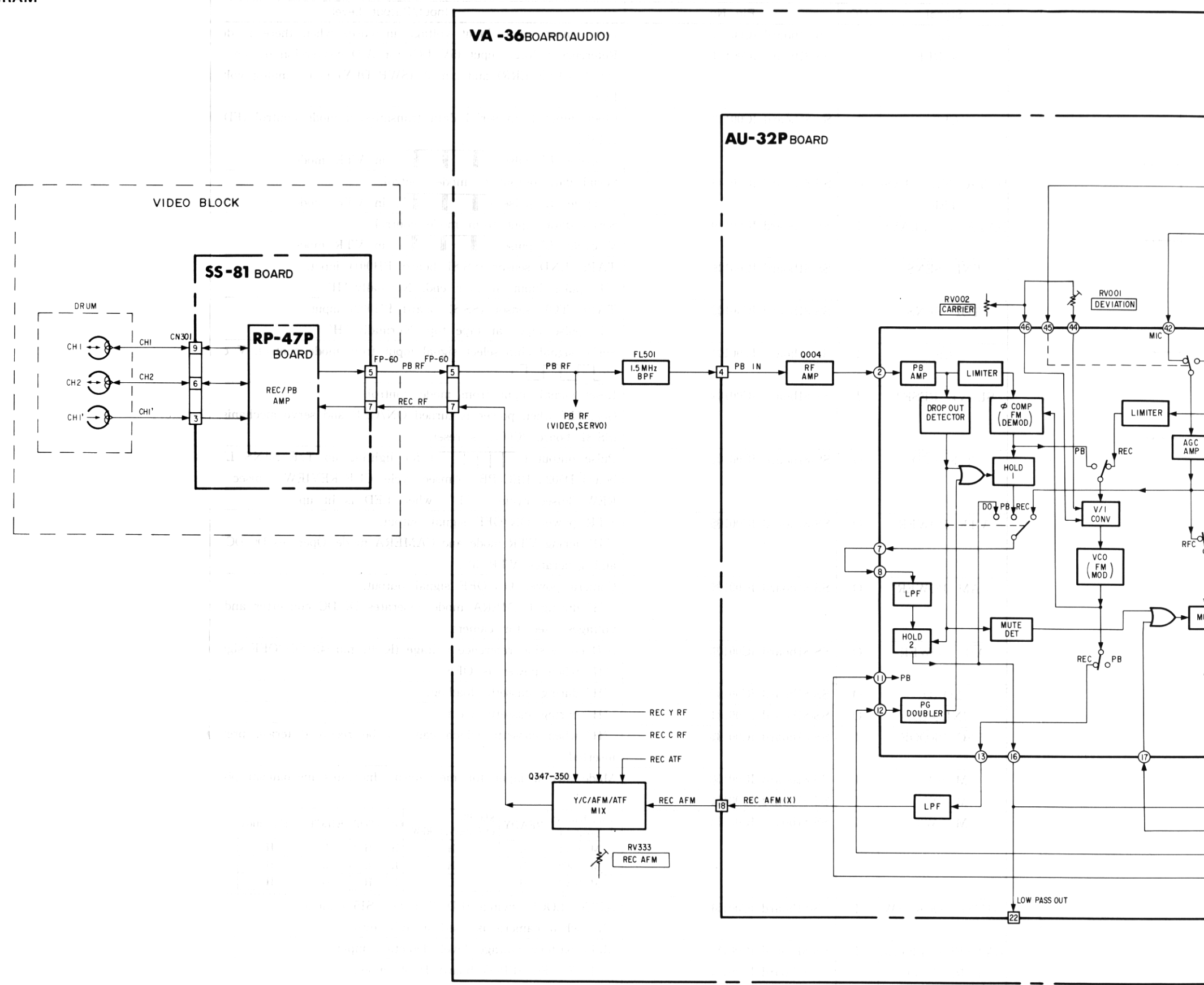
3-10-5. Timing chart 5 (REC)



3-11. SYSTEM CONTROL—PERIPHERAL CIRCUIT INTERFACE

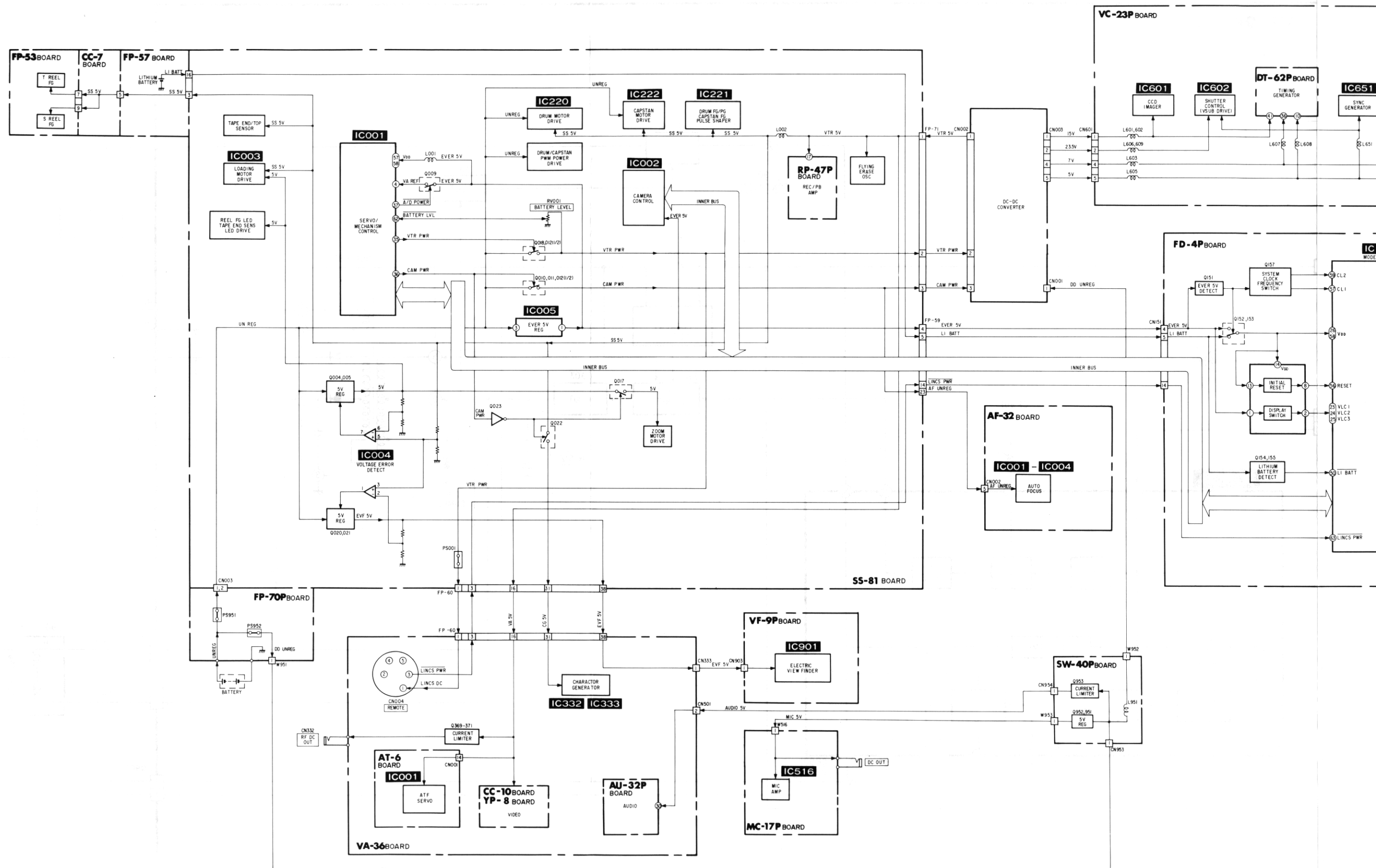
Signal	I/O	Pin No.	Input/Output Level																												
DEW	I	SS-81board IC001 ①	Dew sensor input. Input voltage increases when there is dew.																												
VA REF	I	SS-81board IC001 ④	Reference voltage input (5V DC) for A-D conversion of pin ① (DEW), pin ② (ATF ERR) and pin ③ (SWP DLY) input analog voltage (0-5V DC).																												
CLK	I	SS-81board IC001 ⑦	Clock input from serial data transmission mode control (FD-4P board IC151). V cycle "L" pulse () in VTR mode.																												
DATA TO MASTER	O	SS-81board IC001 ⑧	Serial data output to mode control. V cycle "L" pulse () in VTR mode.																												
DATA TO SLAVE	I	SS-81board IC001 ⑨	Serial data input from mode control. V cycle "L" pulse () in VTR mode.																												
END SENS	I	SS-81board IC001 ⑩	TAPE END sensor (SS-81 board PH001) input. "L" pulse input at tape end. Normally "H" .																												
TOP SENS	I	SS-81board IC001 ⑪	TAPE TOP sensor (SS-81 board PH002) input. "L" pulse input at tape top. Normally "H" .																												
CS	I	SS-81board IC001 ⑫	Serial signal chip select signal input from mode control. V cycle pulse ().																												
SLAVE RESET	I	SS-81board IC001 ⑬	Reset signal input from mode control. Goes "L" when power is turned ON/OFF and servo/mechanism control (SS-81 board IC001) is reset.																												
T/E LED	O	SS-81board IC001 ⑭	Pulse output () for lighting up T/E SENS LED (FP-53 board D502). REC/PB 100msec cycle. CUE/REVIEW 17msec cycle. FF/REW 3msec cycle. "L" when LED is lit up.																												
VTR POWER	O	SS-81board IC001 ⑮	VTR power ON/OFF signal output. "H" during VTR mode and CAMERA mode. Operates DC-DC converter, and generates VTR 5V.																												
CAM POWER	O	SS-81board IC001 ⑯	Camera power ON/OFF signal output. "H" during CAMERA mode. Operates DC-DC converter and generates voltages used for camera.																												
A/D POWER	O	SS-81board IC001 ⑰	A-D conversion reference voltage (IC001 pin ④) ON/OFF signal output. "H" when power is OFF.																												
LOAD	O	SS-81board IC001 ⑱	"H" during cassette loading.																												
UNLOAD	O	SS-81board IC001 ⑲	"H" during cassette eject.																												
REC PROOF	I	SS-81board IC001 ⑳	"H" when cassette which can not be recorded (erase prevention) is inserted.																												
M SW1	I	SS-81board IC001 ㉑	Mode switch input for mechanism. Indicates mechanism position. <table border="1"><thead><tr><th>Mechanism position</th><th>READY</th><th>REC/PB/CUE/REV/FF/REW</th><th>GL</th><th>STOP</th><th>EJECT</th><th>Mid-position</th></tr></thead><tbody><tr><td>M SW1</td><td>L</td><td>H</td><td>H</td><td>H</td><td>L</td><td>H</td></tr><tr><td>M SW2</td><td>H</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td></tr><tr><td>M SW3</td><td>H</td><td>L</td><td>L</td><td>H</td><td>H</td><td>H</td></tr></tbody></table>	Mechanism position	READY	REC/PB/CUE/REV/FF/REW	GL	STOP	EJECT	Mid-position	M SW1	L	H	H	H	L	H	M SW2	H	H	L	L	L	H	M SW3	H	L	L	H	H	H
Mechanism position	READY	REC/PB/CUE/REV/FF/REW		GL	STOP	EJECT	Mid-position																								
M SW1	L	H		H	H	L	H																								
M SW2	H	H	L	L	L	H																									
M SW3	H	L	L	H	H	H																									
M SW2	I	SS-81board IC001 ㉒																													
M SW3	I	SS-81board IC001 ㉓																													
AUTO LOCK SW	I	SS-81board IC001 ㉔	AUTO LOCK switch (FD-4P board S151) input. "L" when camera is used in full auto.																												
BATTERY LEVEL	I	SS-81board IC001 ㉕	Main battery voltage level detection input.																												
T REEL FG	I	SS-81board IC001 ㉖	T REEL FG (FP-53 board D504) input. Pulse corresponds to S reel rotation.																												
S REEL FG	I	SS-81board IC001 ㉗	S REEL FG (FP-53 board D503) input. Pulse corresponds to S reel rotation.																												

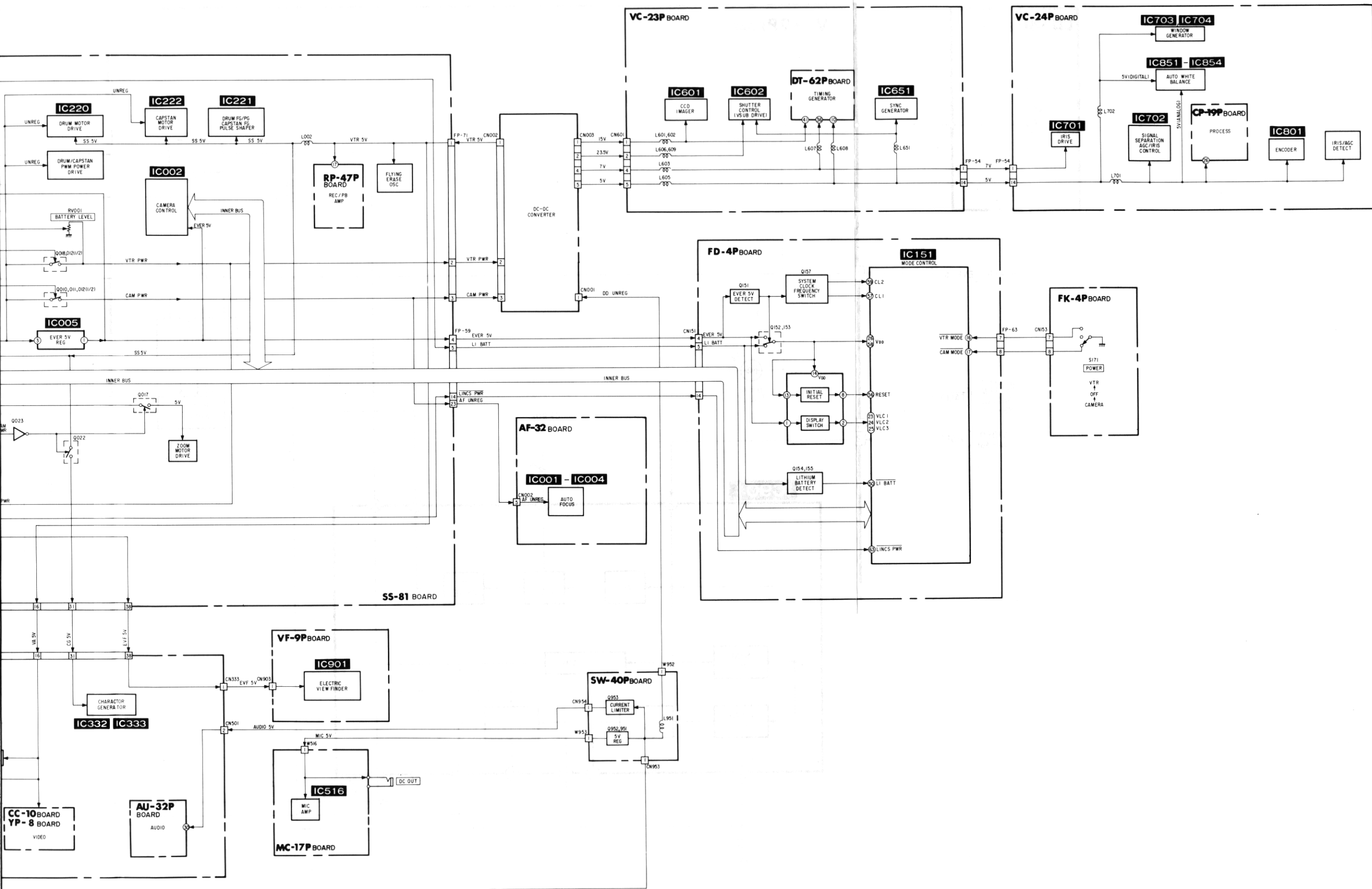
3-12. AUDIO BLOCK DIAGRAM



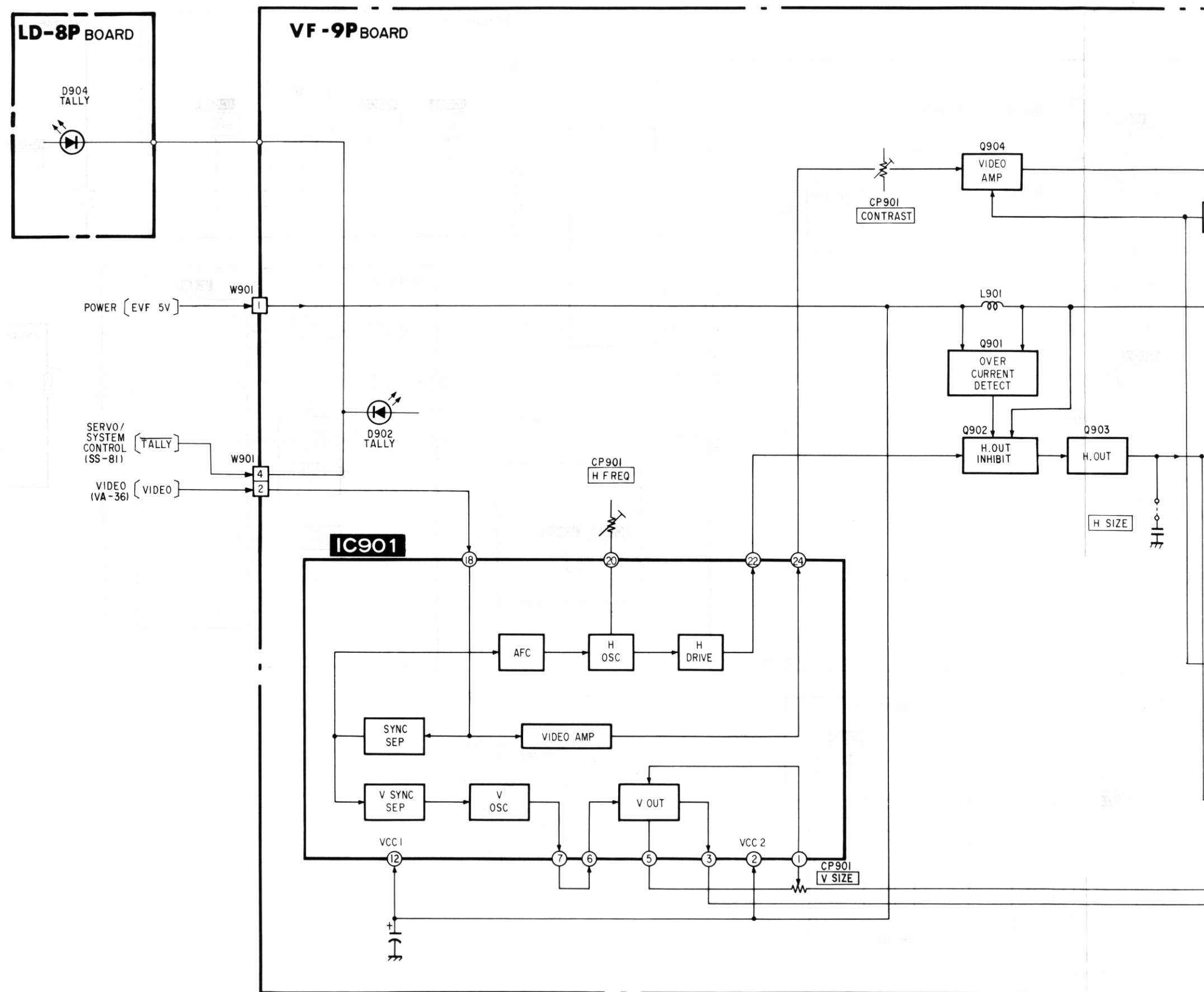


3-13. POWER BLOCK DIAGRAM

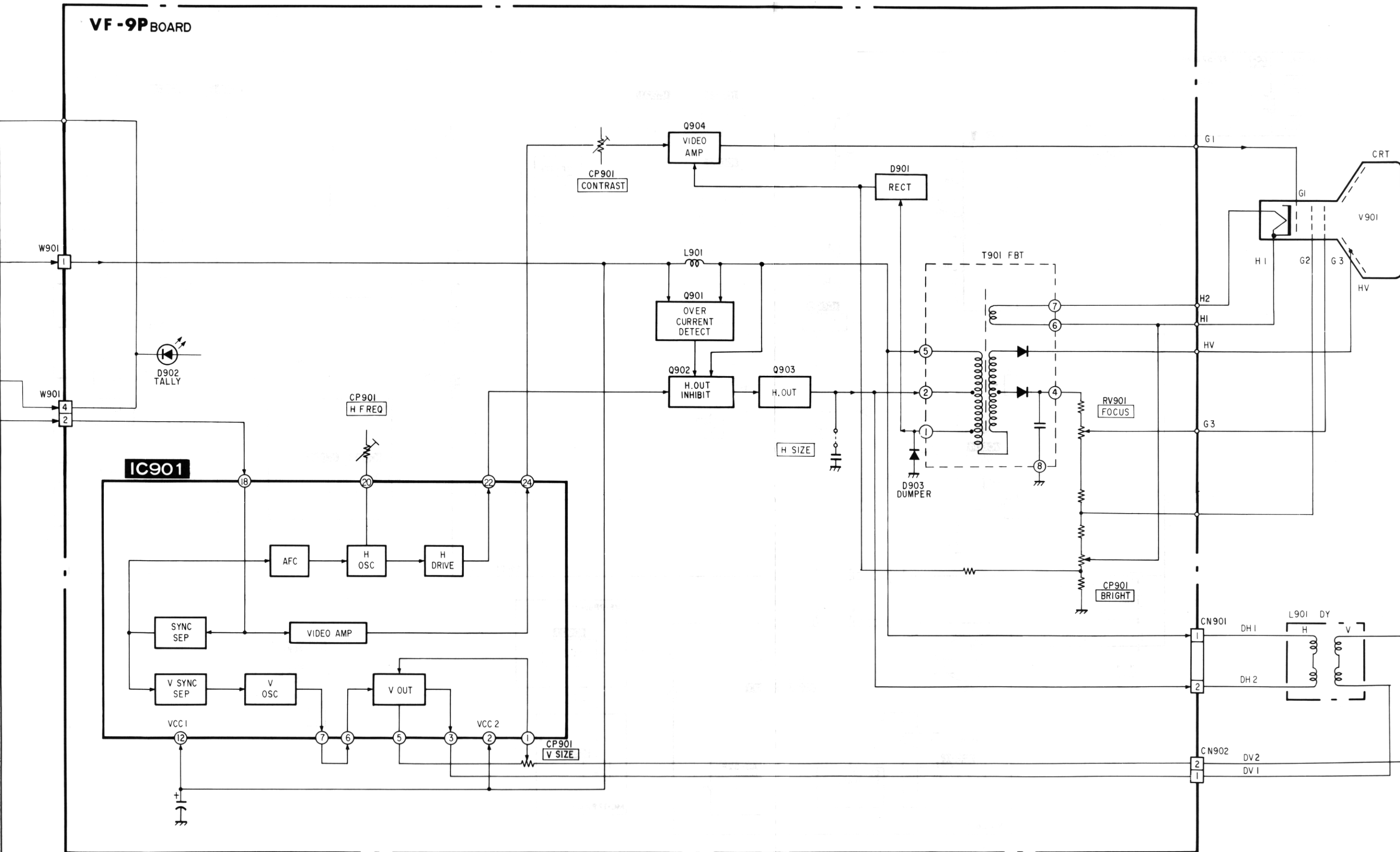




3-14. VIEWFINDER BLOCK DIAGRAM

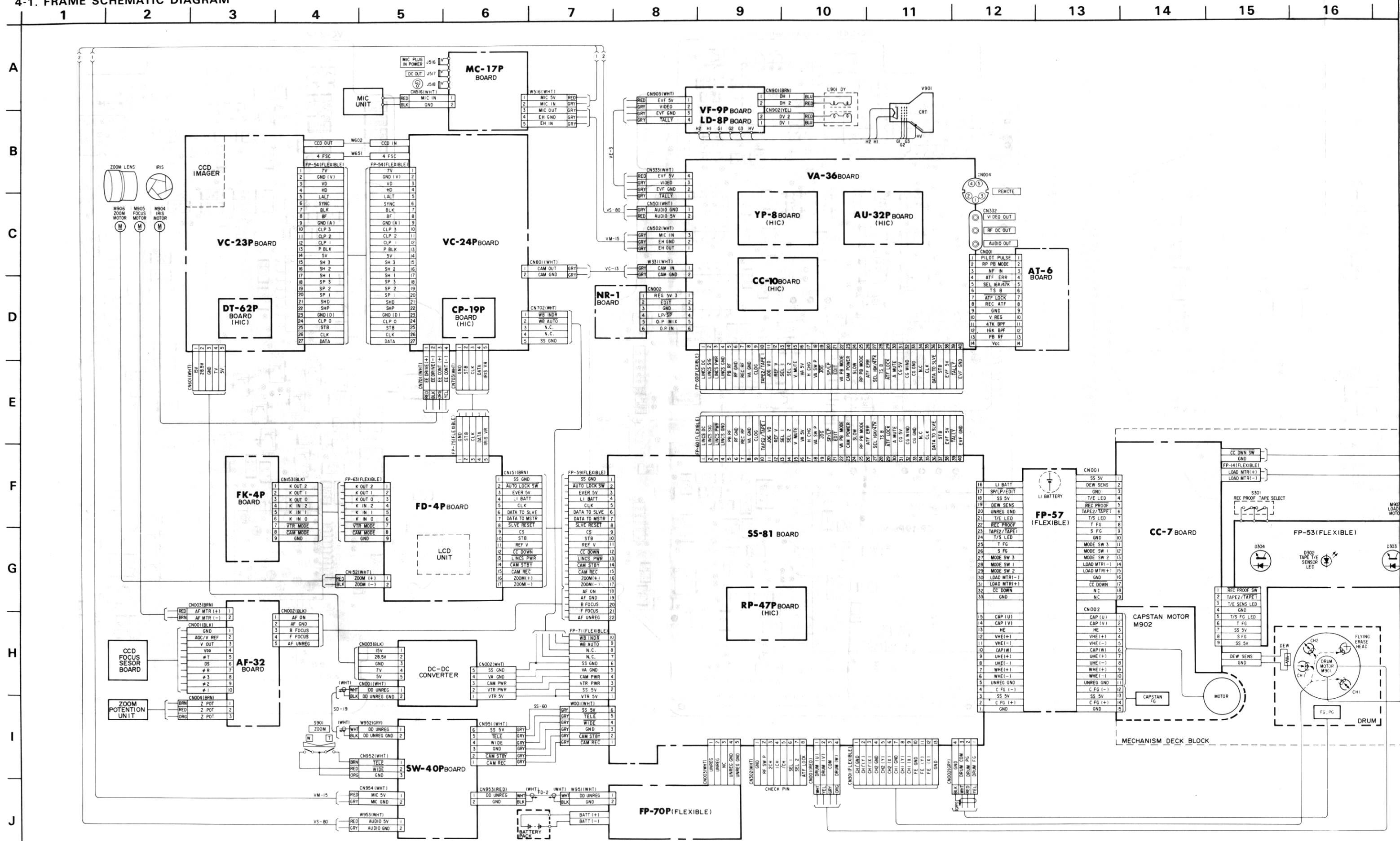


VF-9P BOARD



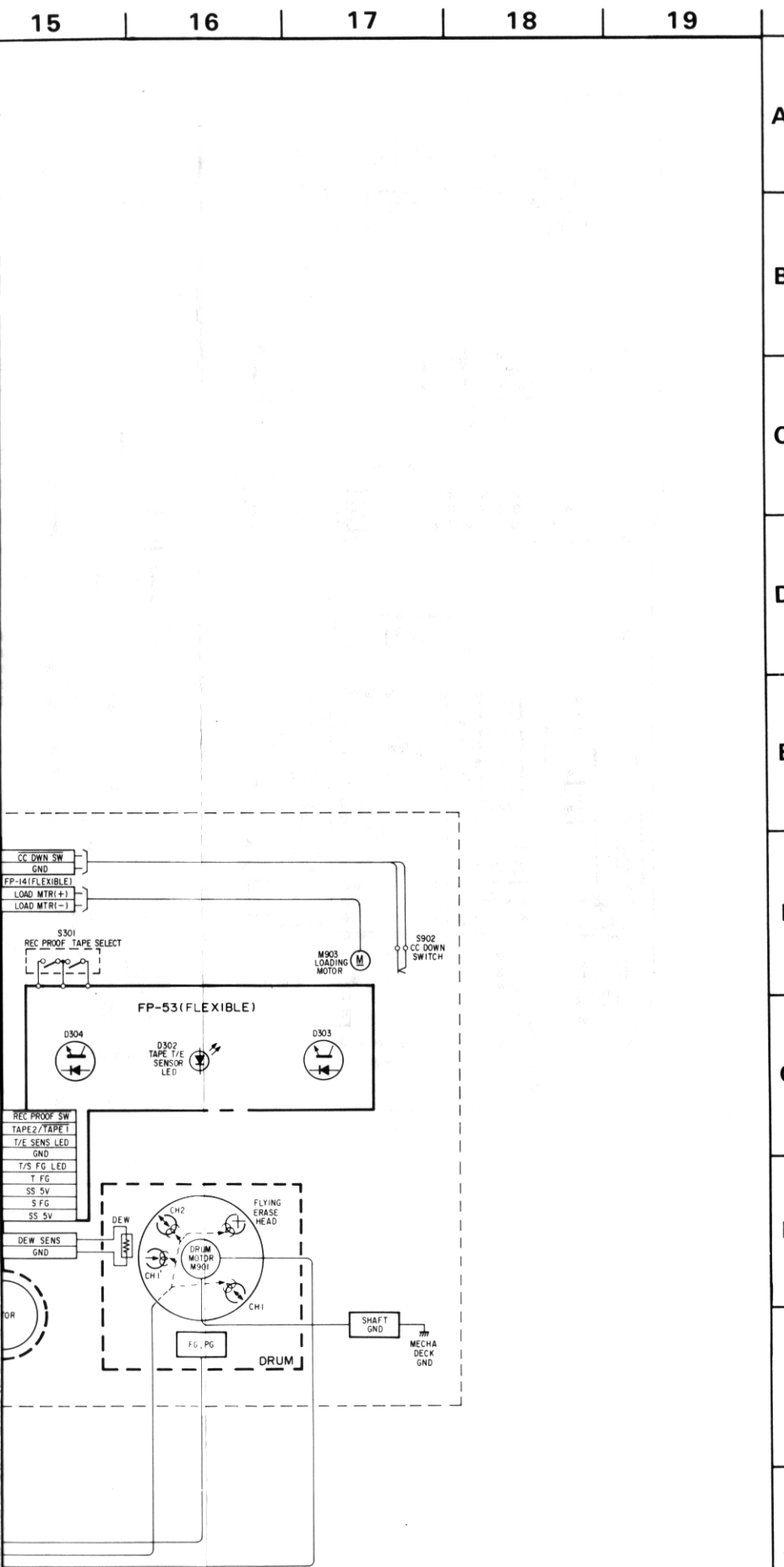
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

4-1. FRAME SCHEMATIC DIAGRAM



PRECAUTION FOR REPLACEMENT OF CCD IMAGER BLOCK

- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.



VC-23P(CCD IMAGER, TIMING/SYNC GENERATOR), VC-24P(CAMERA ENCODER, AGC/IRIS CONTROL) PRINTED WIRING BOARDS

—Ref. No. VC-23P and VC-24P BOARDS : 1,000 series—

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

Note:

-  : Through hole.
-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.
- Digital transistor (VC-24P board: Q851, Q852, Q853, Q854, Q857, Q858, Q859, Q862): transistor with resistor. Refer to the VC-24P board schematic diagram for digital transistor.

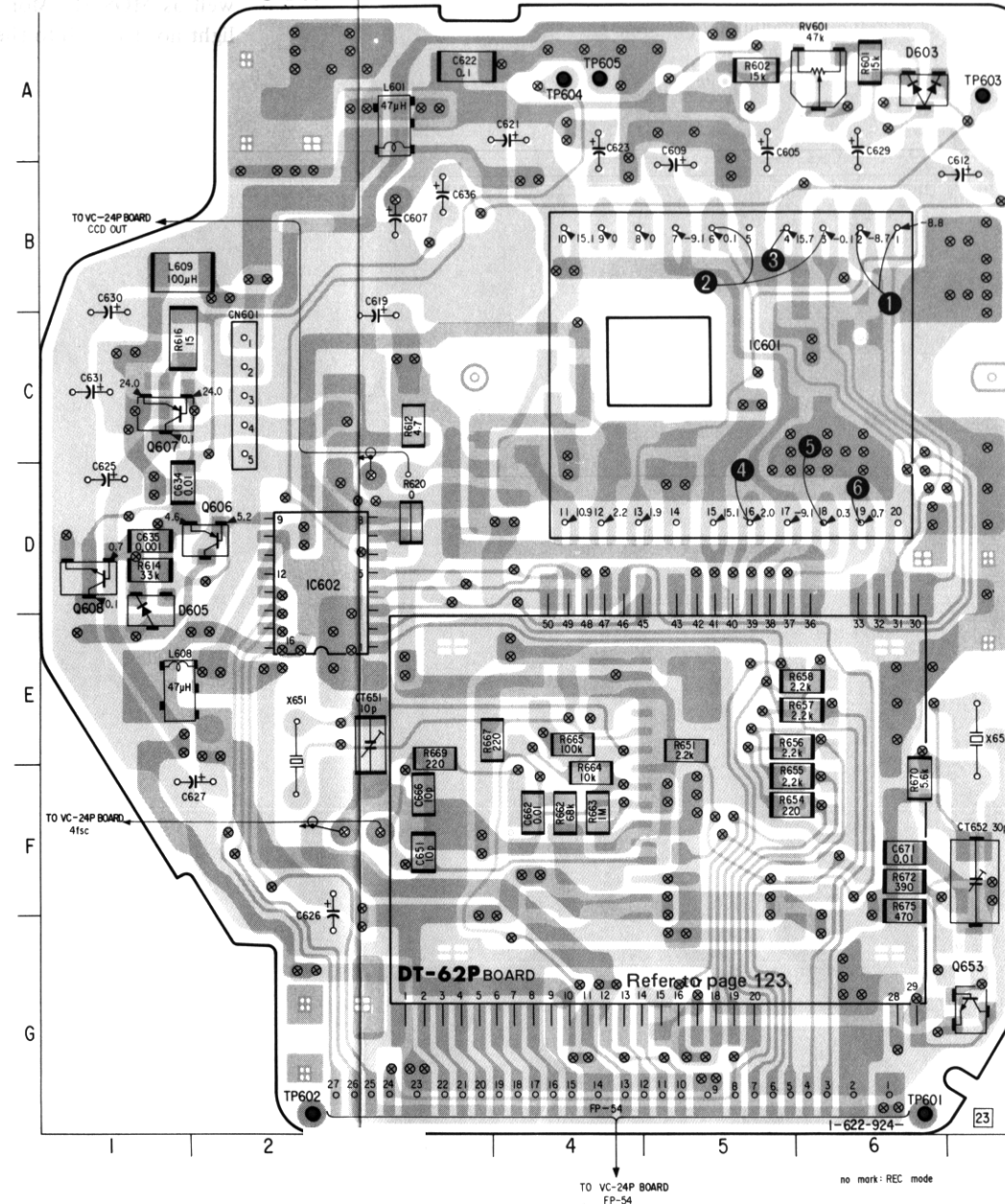
Caution:

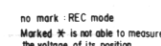
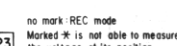
Pattern face side: Parts on the pattern face side seen from (Solder Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated.

When indicating parts by reference number, please include the board name.

CN601	C-2
CT651	E-3
CT652	F-7
D602	C-10
D603	A-6
D604	C-14
D651	D-1
FP-54	G-4
IC601	C-5
IC602	D-2
IC651	E-11
Q601	A-9
Q602	A-10
Q603	A-10
Q604	A-12
Q605	D-14
Q606	D-2
Q607	C-1
Q608	D-1
Q651	F-12
Q652	F-9
Q653	G-7
RV601	A-6
TP601	G-6
TP602	G-2
TP603	A-7
TP604	A-3
TP605	A-3

VC-23P BOARD (COMPONENT SIDE)





CAMERA(1) **CAMERA(1)**

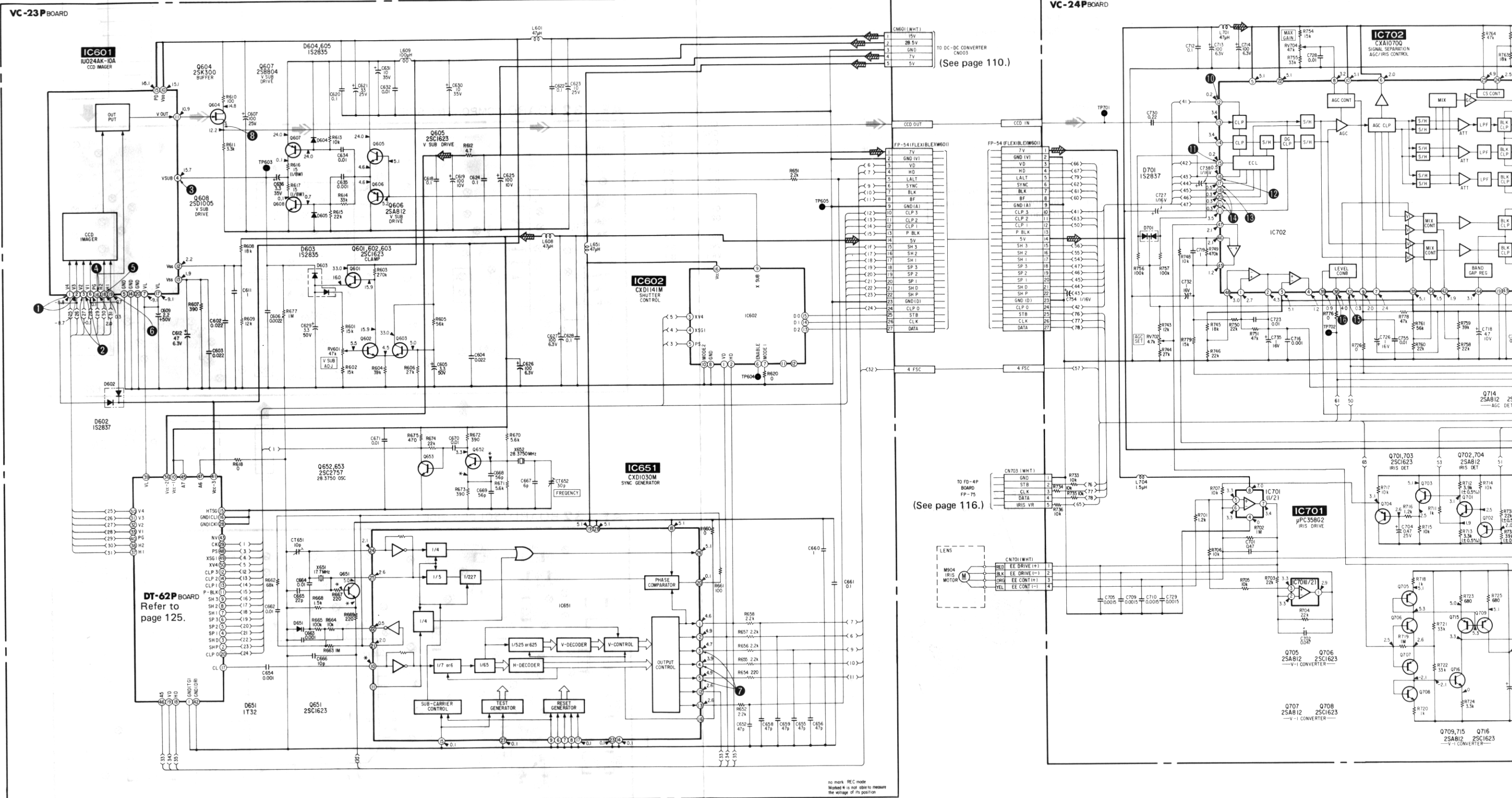
VC-23P(CCD IMAGER, TIMING/SYNC GENERATOR), VC-24P(CAMERA ENCODER, AGC/IRIS CONTROL) SCHEMATIC DIAGRAM

—Ref. No. VC-23P and VC-24P BOARDS : 1,000 series—

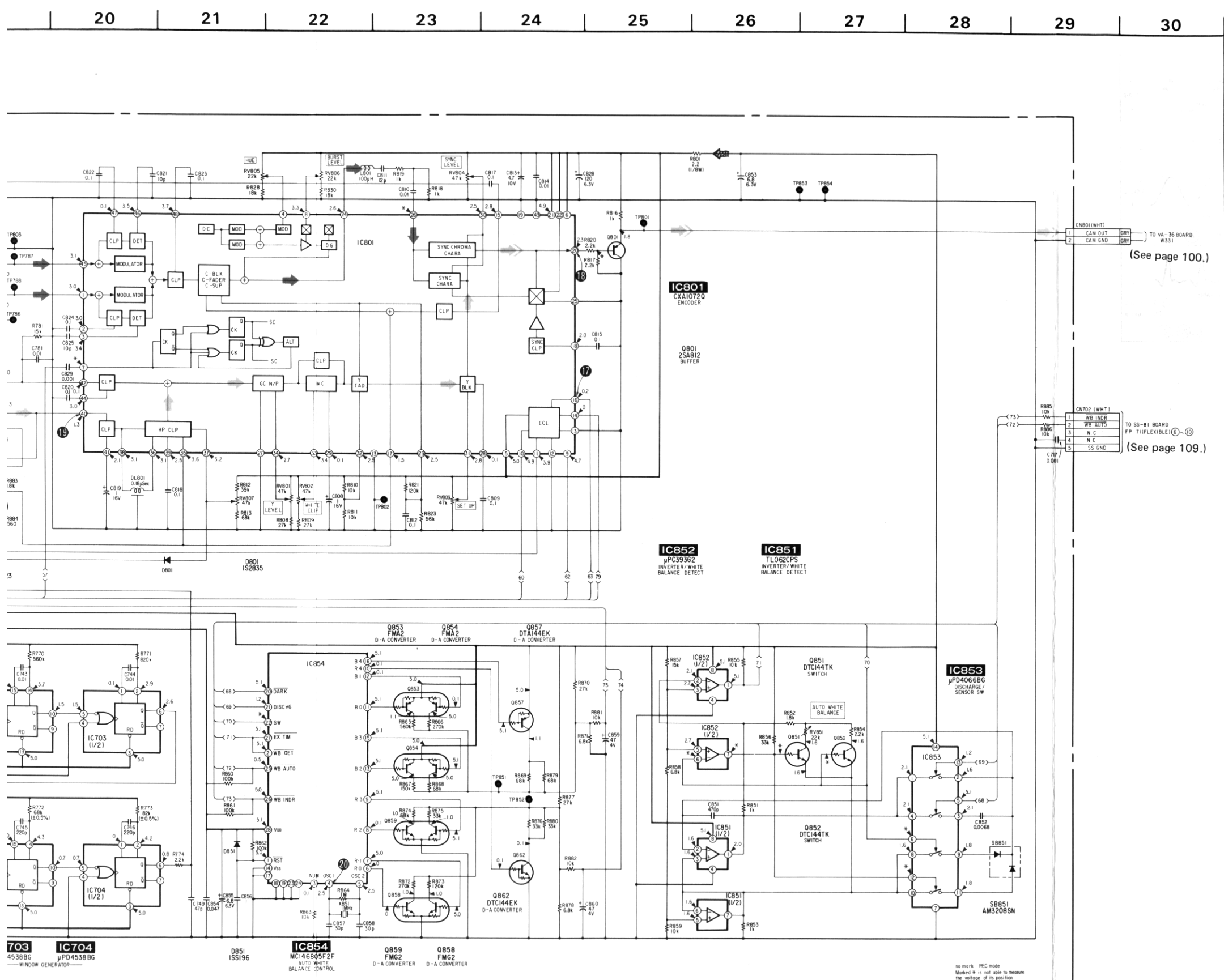
When indicating parts by reference number, please include the board name.

- Signal path

➡ : REC CHROMA Signal

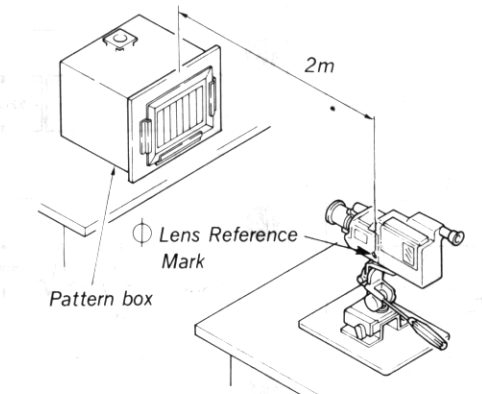


no mark REC mode
Marked N is not able to measure
the voltage of its position



- Note:**
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
 - All resistors are in ohms, 1/10W unless otherwise noted.
 - All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
 - All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
 - Panel designation.
 - Nonflammable resistor
 - B+ bus.
 - IN/OUT direction of B+, B- bus.
 - adjustment for repair.
 - Voltage and waveform measuring conditions:
 - Sample object: Pattern box color bars.
 - Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

1. Connection



2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

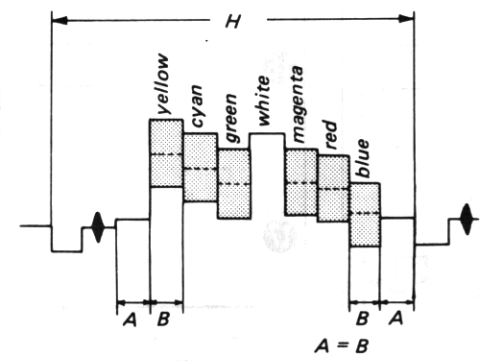


Fig. a Camera output waveform of TP801 on VC-24P board.

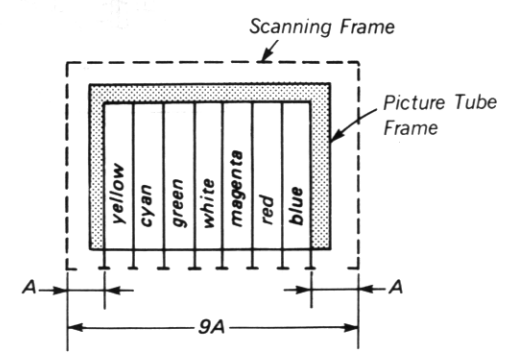
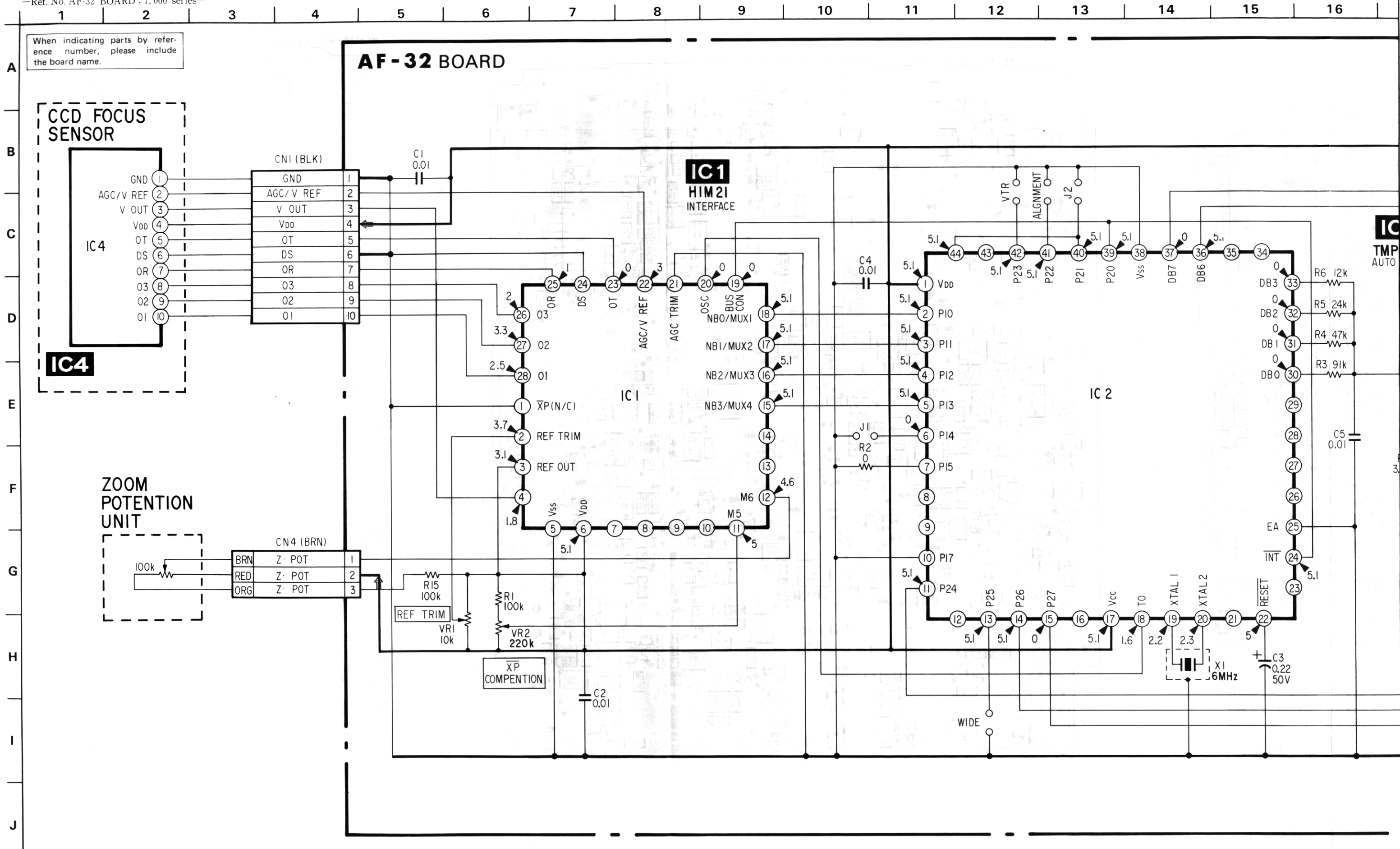
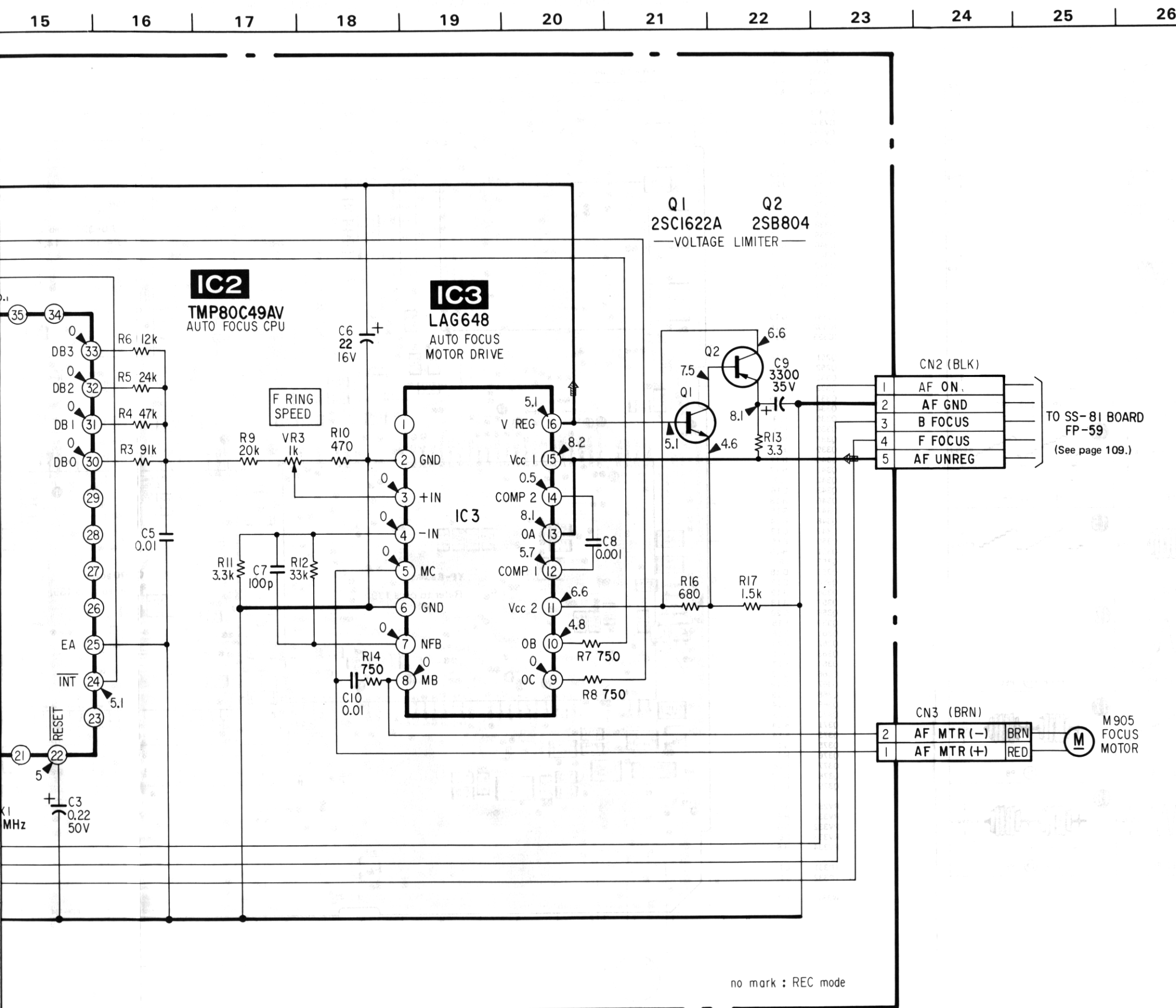


Fig. b Picture of TV monitor screen

AF-32(AUTO FOCUS CONTROL) SCHEMATIC DIAGRAM

—Ref. No. AF-32 BOARD : 7,000 series—

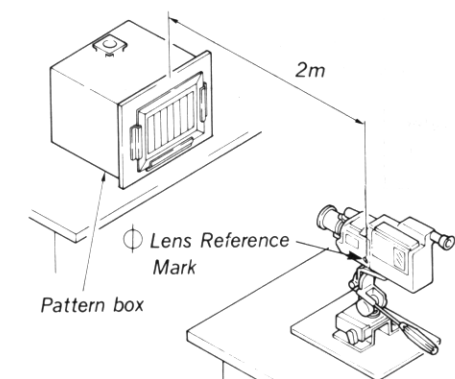




Note:

- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted.
50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- : panel designation.
- : Nonflammable resistor
- : B+ bus.
- : IN/OUT direction of B+, B- bus.
- : adjustment for repair.
- Voltage and waveform measuring conditions:
(1) Sample object: Pattern box color bars.
(2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

1. Connection



2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

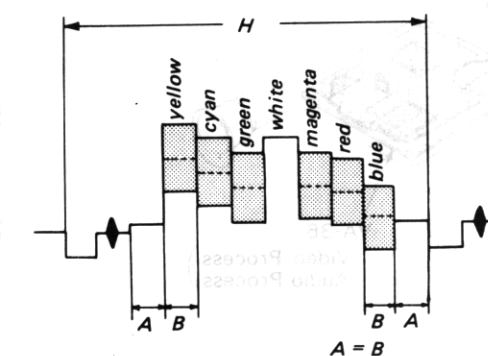


Fig. a Camera output waveform of TP801 on VC-24P board.

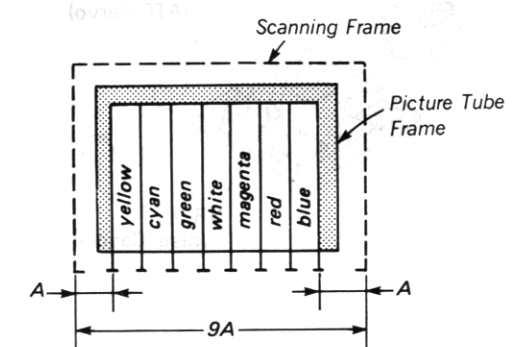


Fig. b Picture of TV monitor screen

VA-36(VIDEO PROCESS, AUDIO PROCESS), MC-17P(MIC AMP), NR-1(Noise Cancel), AT-6(ATF Servo) PRINT

—Ref. No. MC-17P BOARD: 1,000 series, VA-36, NR-1 and AT-6 BOARDS: 2,000 series—

Note:

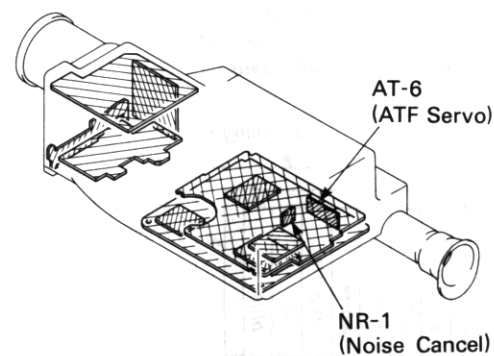
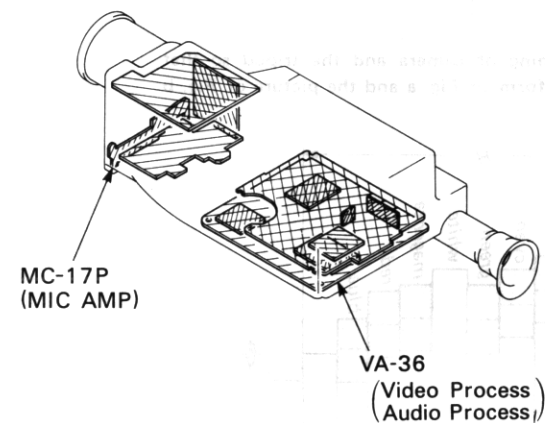
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▩ : Pattern of the rear side.
- Digital transistor (VA-36 board: Q252, Q336, Q337, Q340, Q342, Q346, Q350, Q351, Q353, Q358, Q363, Q364, Q376): transistor with resistor.

Refer to the VA-36 board schematic diagram for digital transistor.

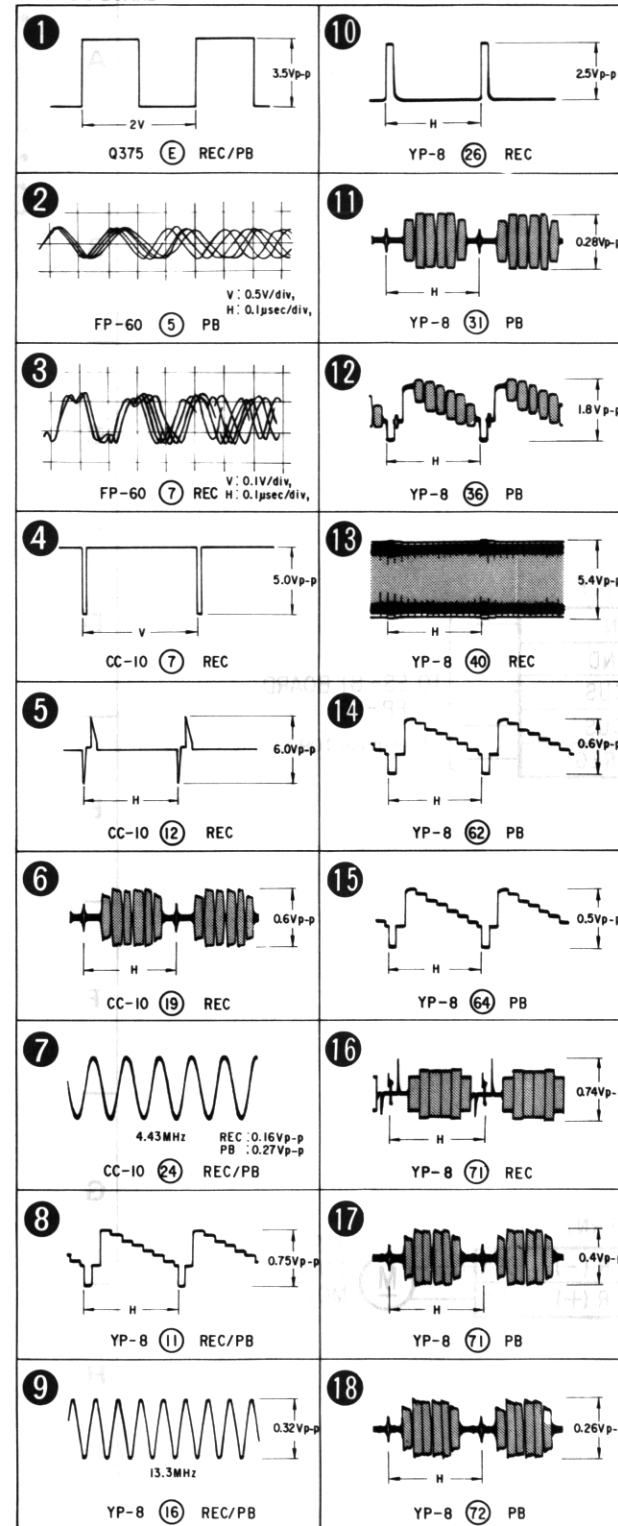
Caution:

Pattern face side: Parts on the pattern face side seen from (Solder Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated.

When indicating parts by reference number, please include the board name.



VA-36 BOARD



CN001 A-4
CN002 B-4
CN333 A-2
CN501 A-6
CN502 A-7

CV331 E-7
CV332 A-1
CV333 I-1
CV334 E-8

D331 K-19
D332 J-19
D333 J-20
D334 I-1
D335 J-18
D336 K-5
D338 D-20
D339 J-13
D340 K-13
D341 J-14
D342 J-16
D343 K-16
D344 A-20
D501 A-13

IC331 G-19
IC332 C-16
IC333 B-19

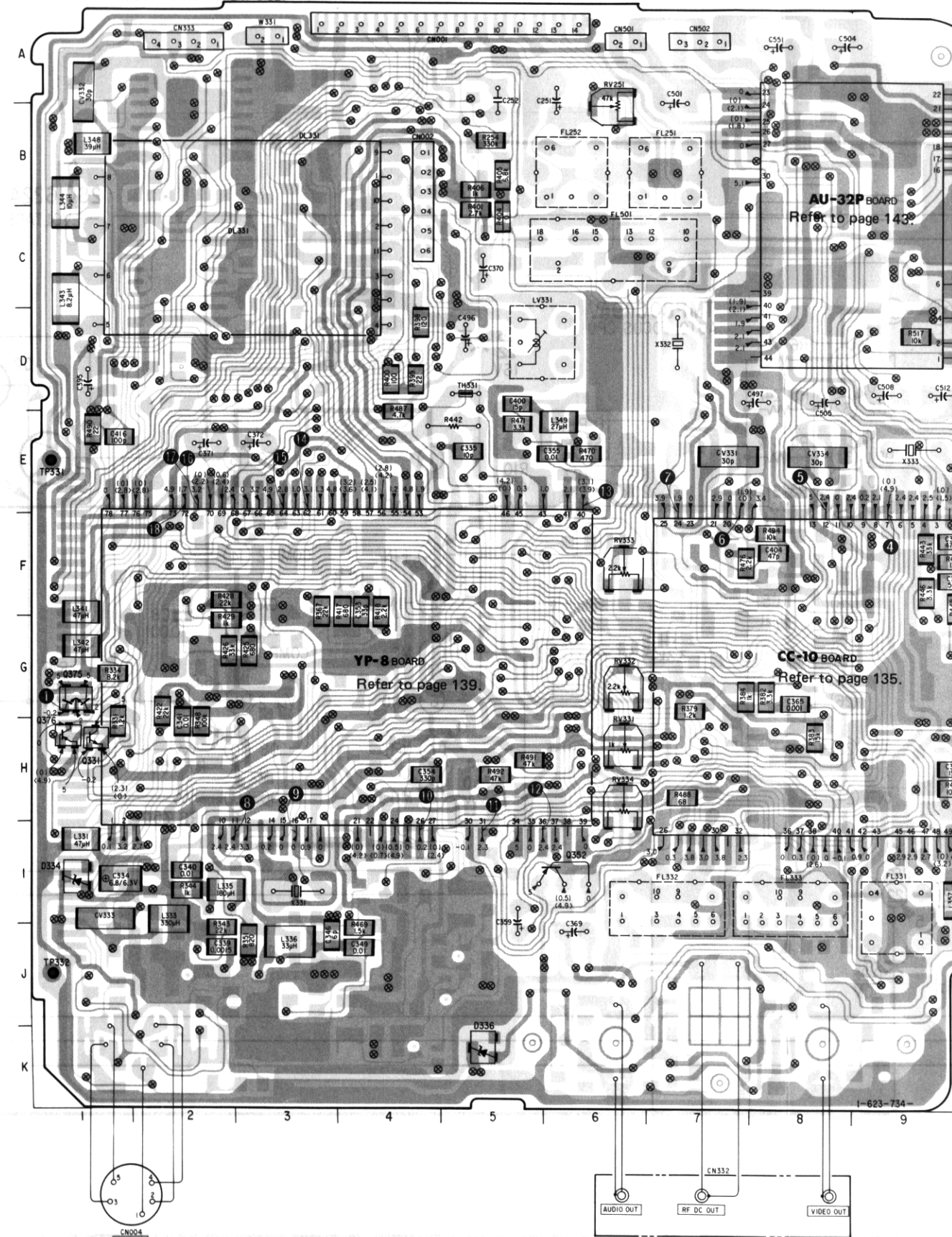
Q251 B-16
Q252 A-17
Q331 H-1
Q332 I-20
Q333 H-19
Q334 H-18
Q335 I-19
Q336 I-18
Q337 H-18
Q339 J-17
Q340 H-17
Q341 H-17
Q342 I-17
Q343 E-16
Q346 H-13
Q347 G-15
Q348 H-14
Q349 G-13
Q350 F-15
Q351 H-15
Q352 I-6
Q353 D-18
Q354 C-17
Q356 B-19
Q357 B-18
Q358 G-20
Q359 F-18
Q361 F-18
Q362 F-20
Q363 G-18
Q364 F-17
Q366 G-12
Q367 D-19
Q368 C-19
Q369 K-14
Q370 J-15
Q371 K-14
Q373 E-14
Q375 G-1
Q376 H-1
Q377 F-14
Q378 H-12
Q379 E-13

RV251 A-6
RV331 H-6
RV332 G-6
RV333 F-6
RV334 H-6

TP331 E-1
TP332 J-1

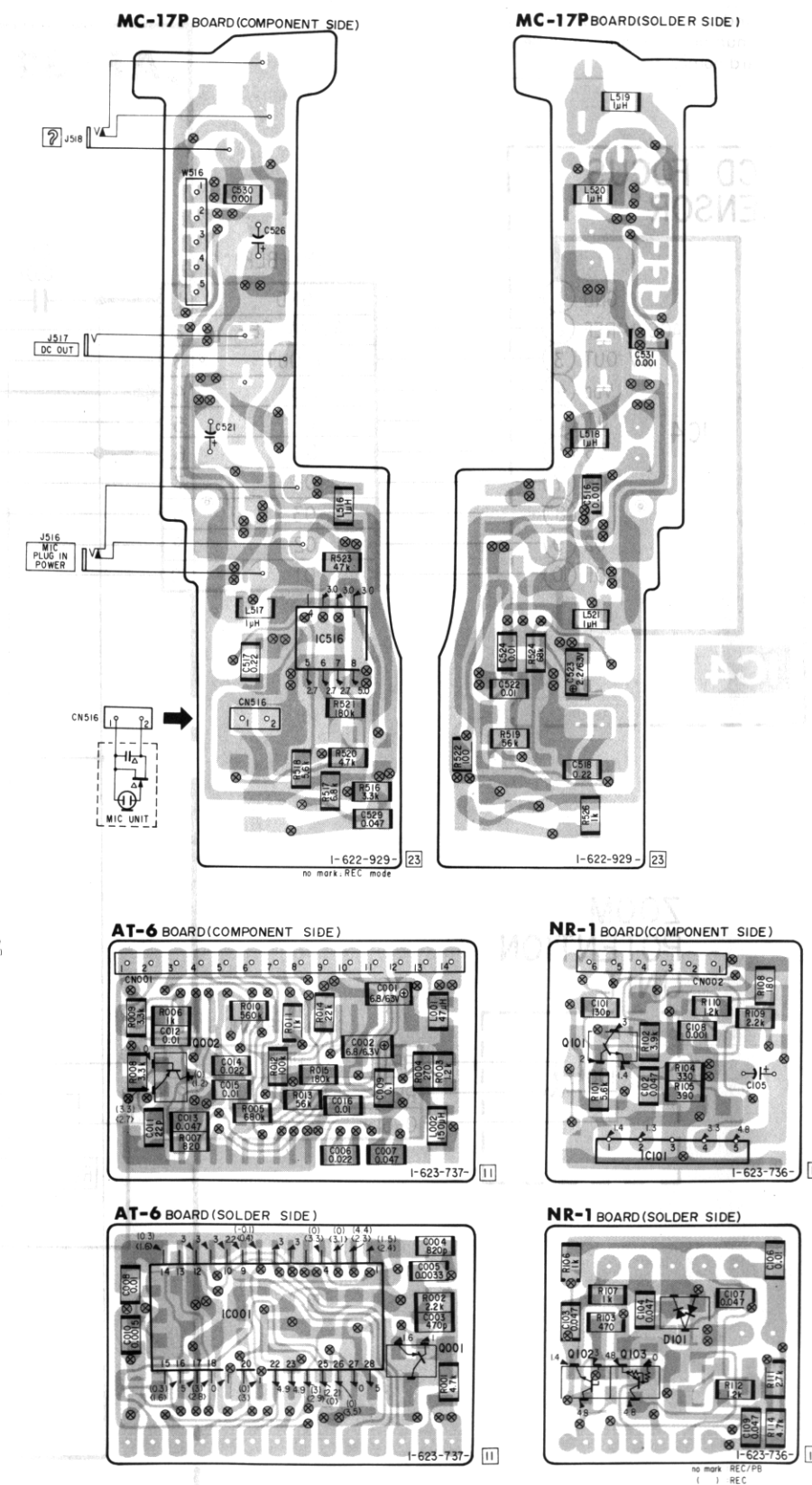
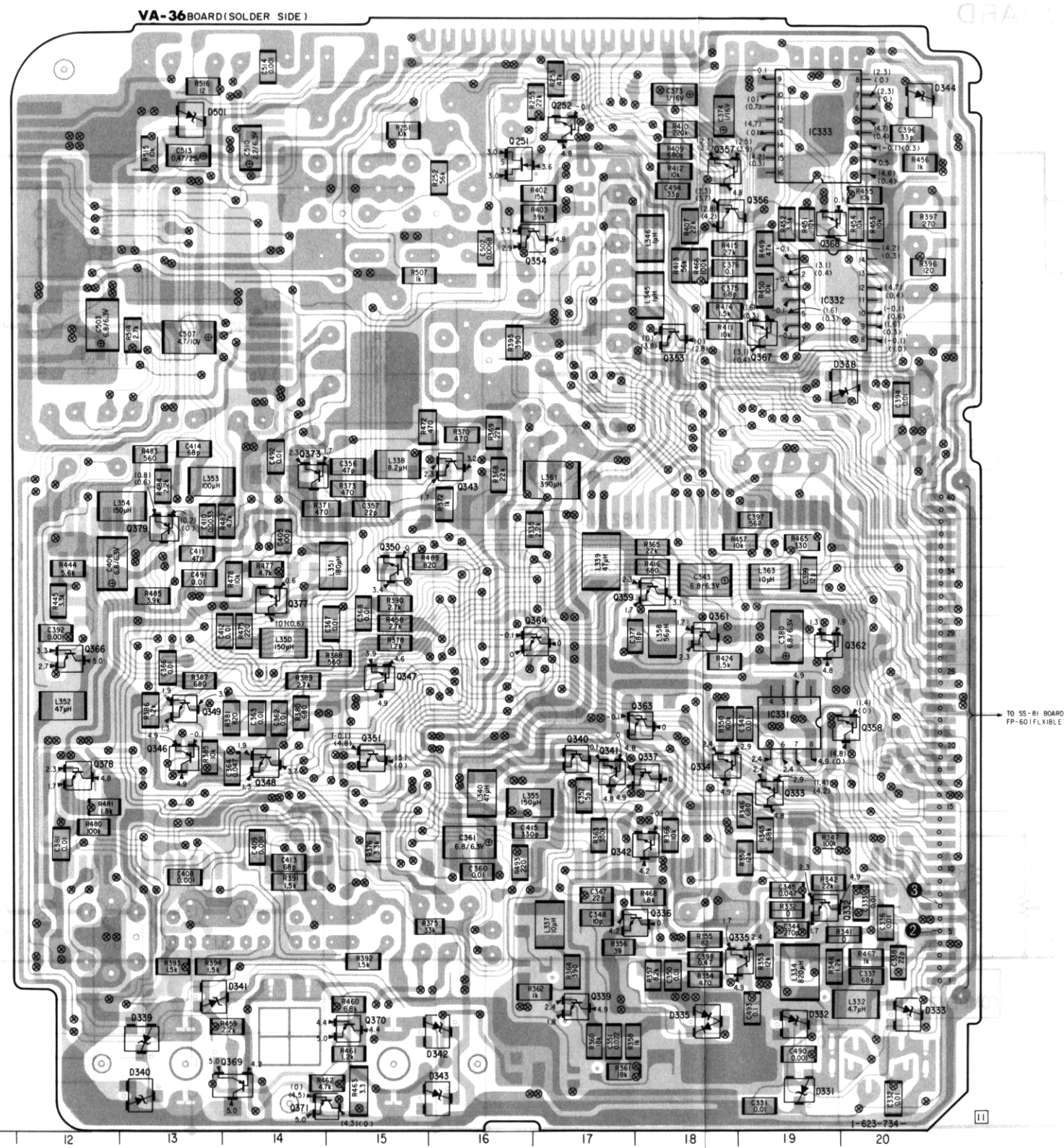
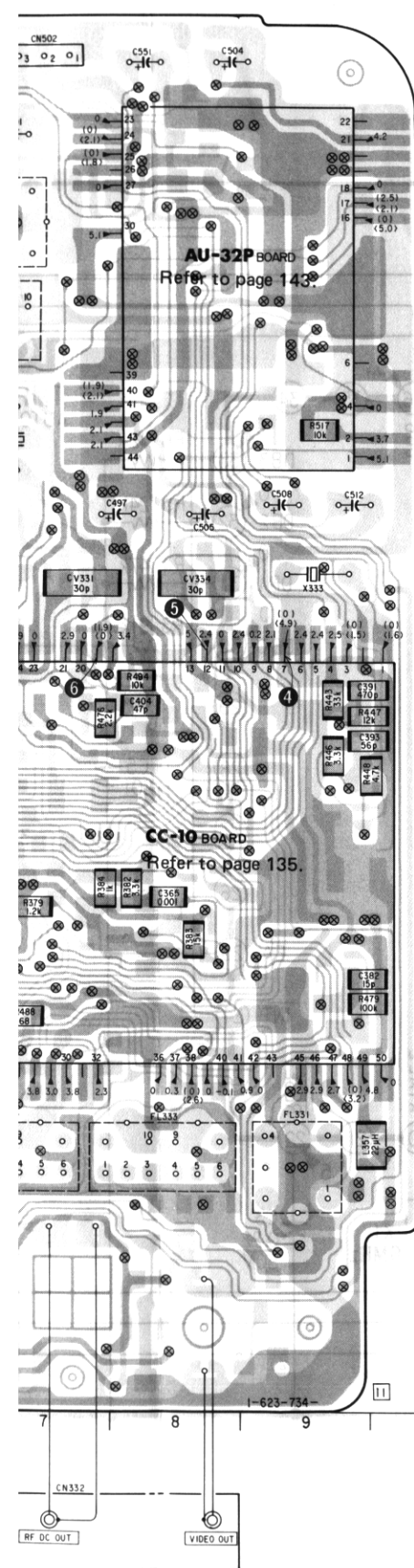
W331 A-3

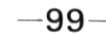
VA-36 BOARD (COMPONENT SIDE)

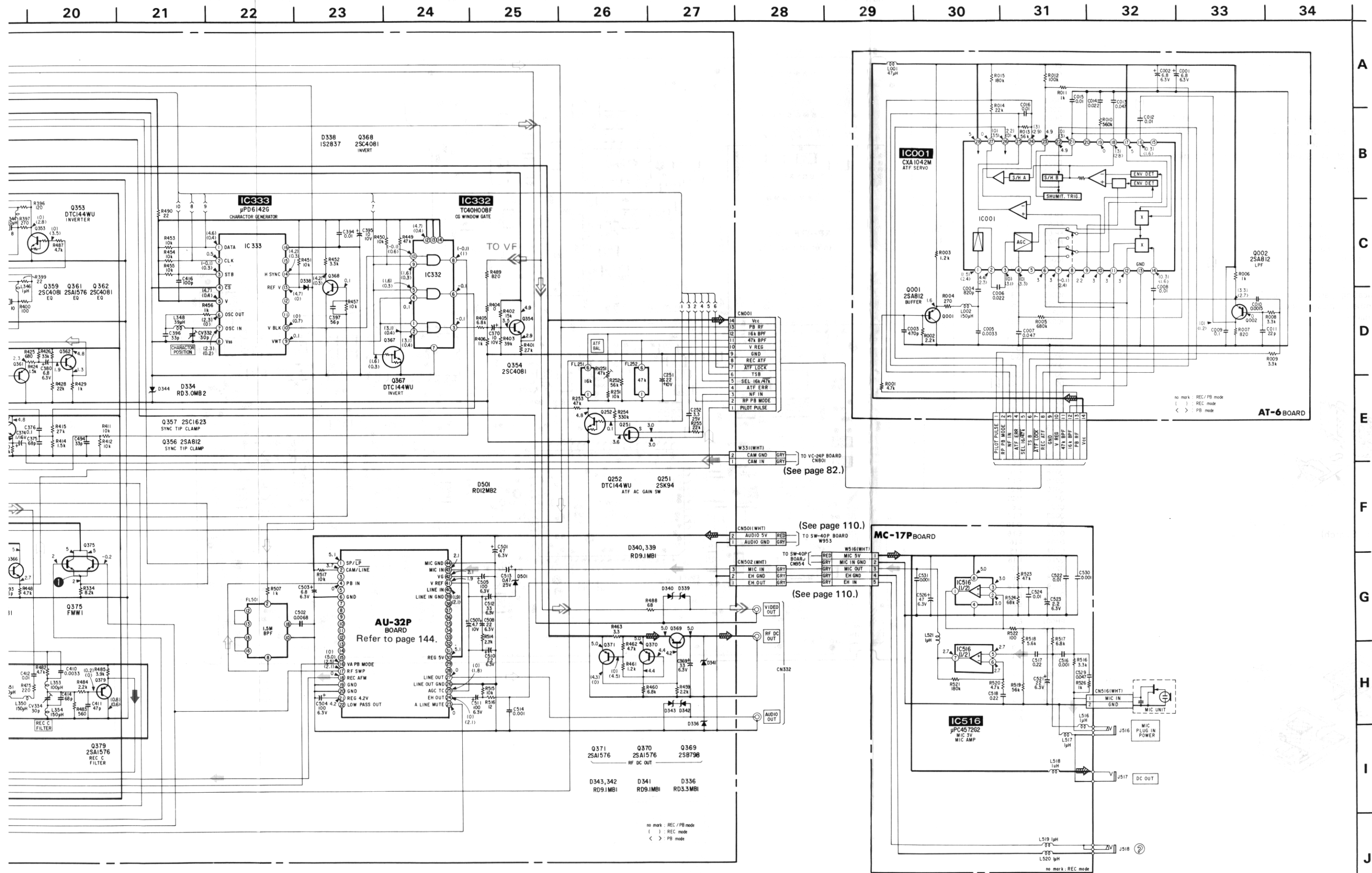


ANCEL), AT-6(ATF SERVO) PRINTED WIRING BOARDS

es







SS-81(SERVO, SYSTEM CONTROL, REC/PB AMP), SW-40P(CAMERA SWITCH), CC-7(MODE SWITCH), FP-53(T/S REEL SENSOR), FP-57(BATTERY HOLDER/RELAY), FP-70P(BAT)

—Ref. No. SS-81 and SW-40P BOARDS : 1,000 series, FP-53 BOARD : 3,000 series, FP-70P BOARD : 4,000 series, CC-7 BOARD : 5,000 series, FP-57 BOARD : 6,000 series—

Note:

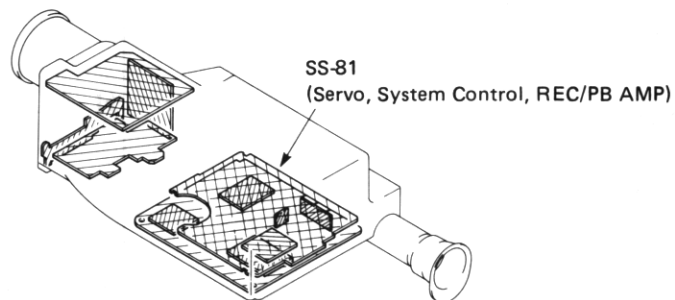
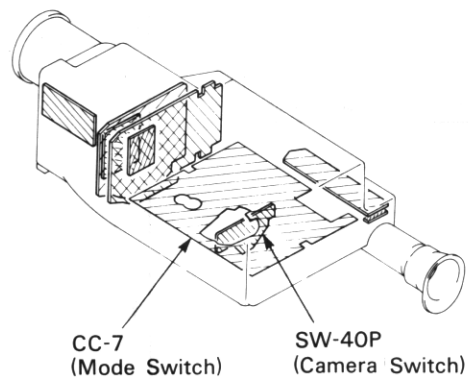
- ○ : indicates a lead wire mounted on the component side.
 - ● : indicates a lead wire mounted on the printed side.
 - ⊗ : Through hole.
 - ■ : Pattern from the side which enables seeing.
 - ■ : Pattern of the rear side.
 - Digital transistor (SS-81 board: Q009, Q012, Q014, Q018, Q019, Q022, Q023, Q024, Q025, Q216, Q217, Q219, SW-40P board: Q951): transistor with resistor.
- Refer to the SS-81, SW-40P boards schematic diagram for digital transistor.

Caution:

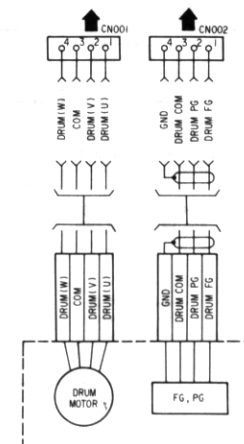
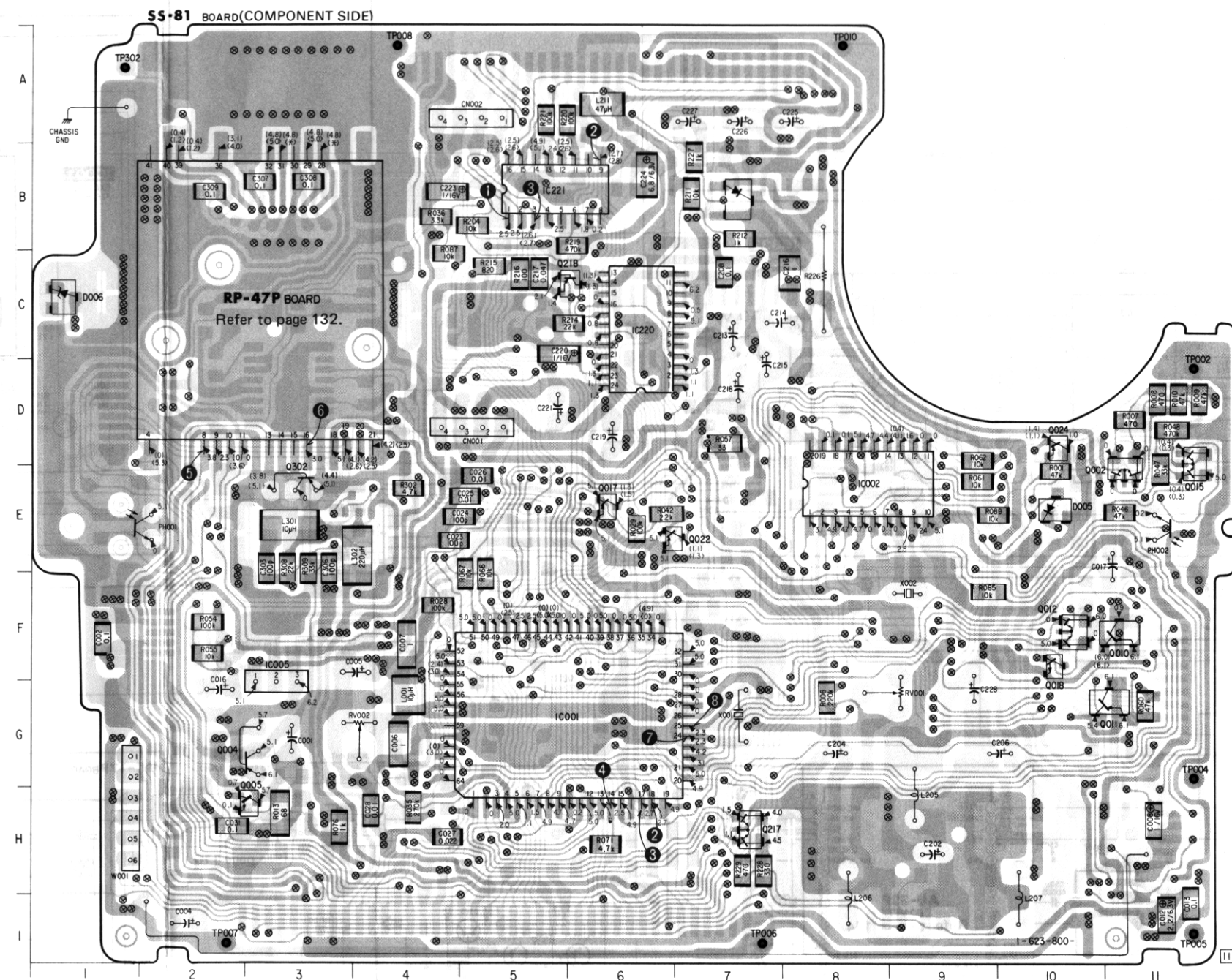
Pattern face side: Parts on the pattern face side seen from
(Solder Side) the pattern face are indicated.

Parts face side: Parts on the parts face side seen from
(Component Side) the parts face are indicated.

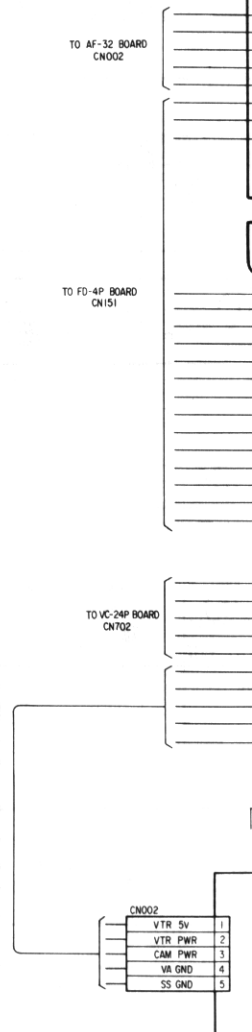
When indicating parts by reference number, please include the board name.

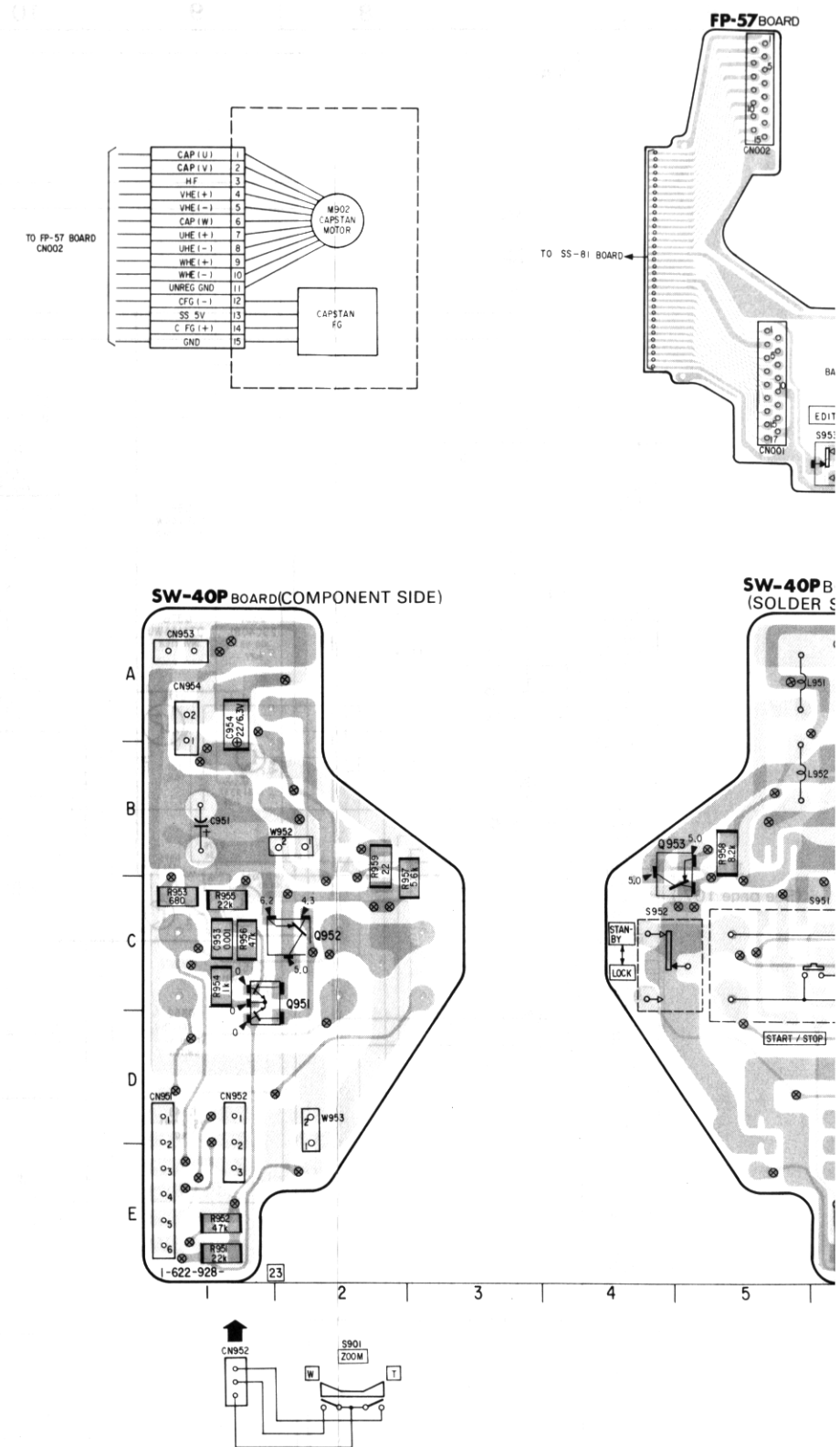
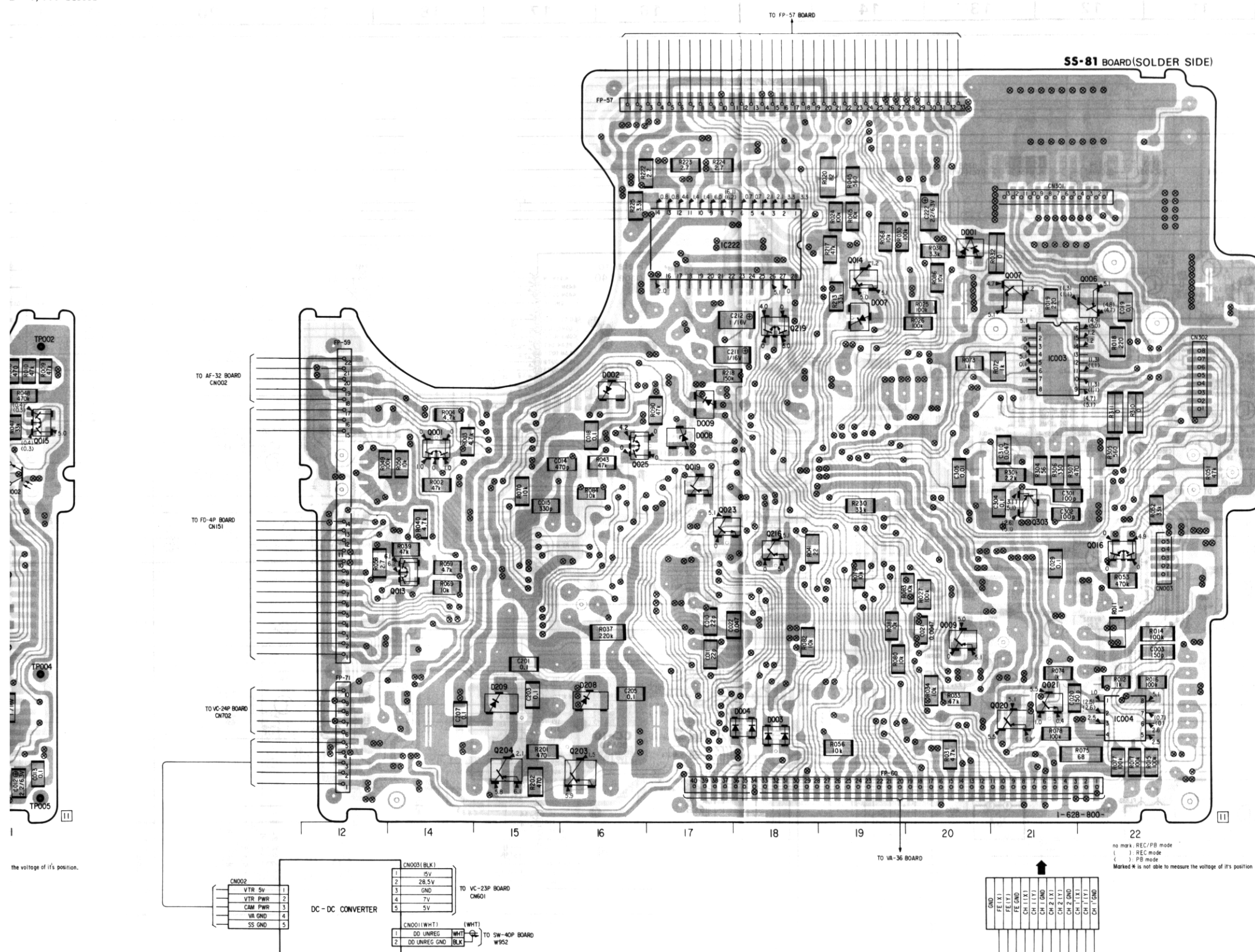


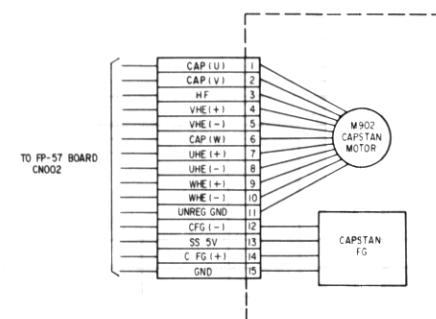
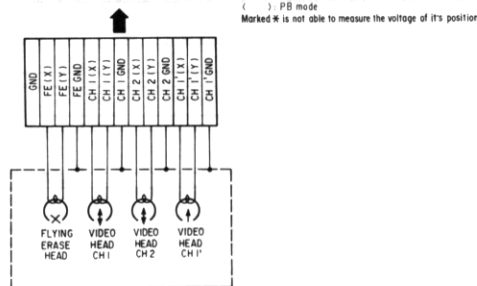
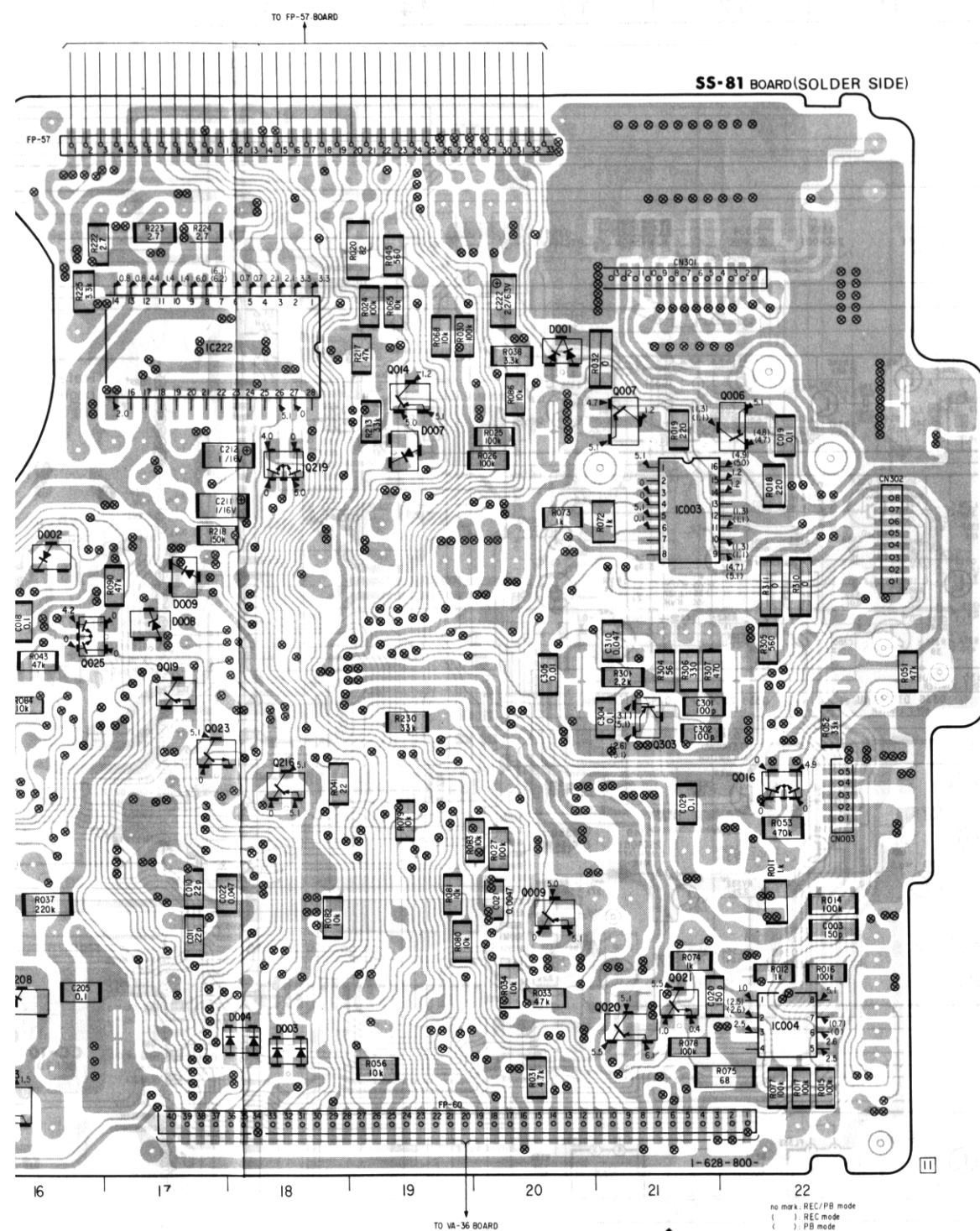
CN001	D-5
CN002	A-5
CN003	F-22
CN301	B-21
CN302	D-22
D001	B-20
D002	D-16
D003	H-18
D004	H-18
D005	E-10
D006	C-1
D007	C-19
D008	E-17
D009	D-17
D208	H-16
D209	H-15
D223	B-7
FP-57	A-16
FP-59	D-12
FP-60	I-19
FP-71	G-12
IC001	G-5
IC002	E-8
IC003	D-21
IC004	H-22
IC005	F-3
IC220	C-6
IC221	B-5
IC222	B-17
Q001	E-14
Q002	D-11
Q004	G-3
Q005	H-3
Q006	C-22
Q007	C-21
Q009	G-20
Q010	F-11
Q011	G-11
Q012	F-10
Q013	F-13
Q014	C-19
Q015	D-11
Q016	F-22
Q017	E-6
Q018	F-10
Q019	F-17
Q020	H-21
Q021	H-21
Q022	E-6
Q023	F-17
Q024	D-10
Q025	E-16
Q203	I-16
Q204	I-15
Q216	F-18
Q217	H-7
Q218	C-6
Q219	C-18
Q302	E-3
Q303	E-21
PH001	E-2
PH002	E-11
RV001	G-9
RV002	G-4
TP002	D-11
TP004	G-11
TP007	I-2
TP008	A-4
TP010	A-8
TP302	A-1
W001	H-1



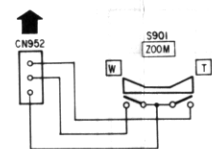
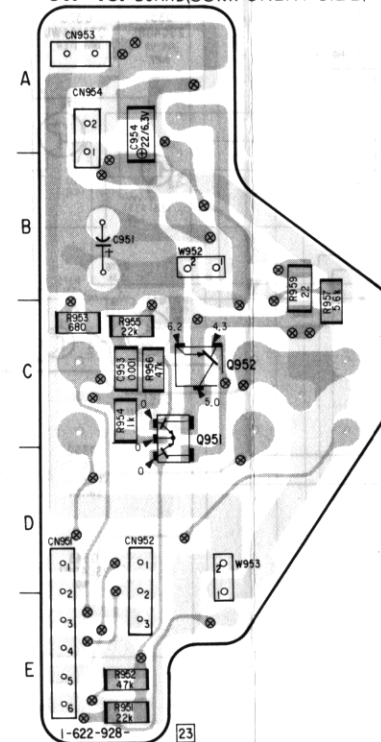
no mark : REC/PB mode
() : REC mode
() : PB mode
Marked * is not able to measure the voltage of it's position.



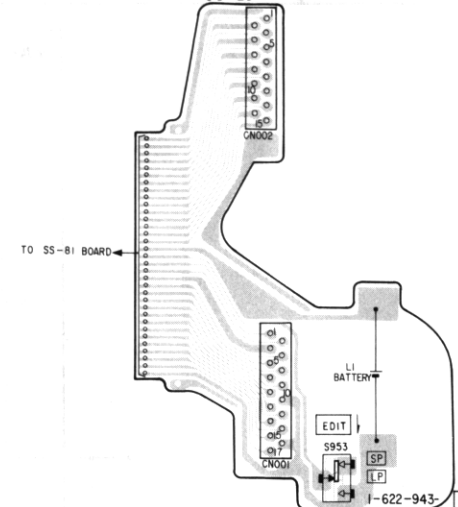




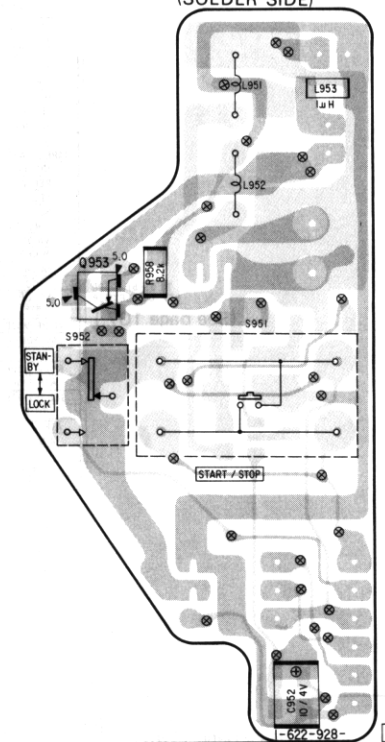
SW-40P BOARD(COMPONENT SIDE)



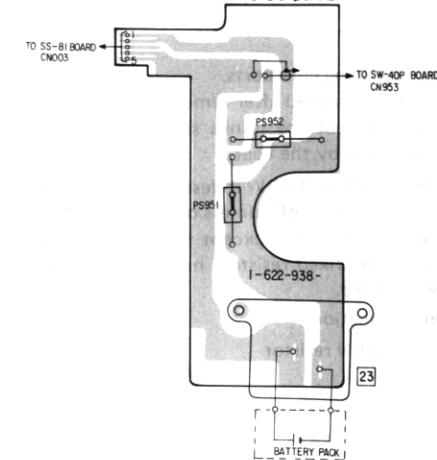
FP-57 BOARD



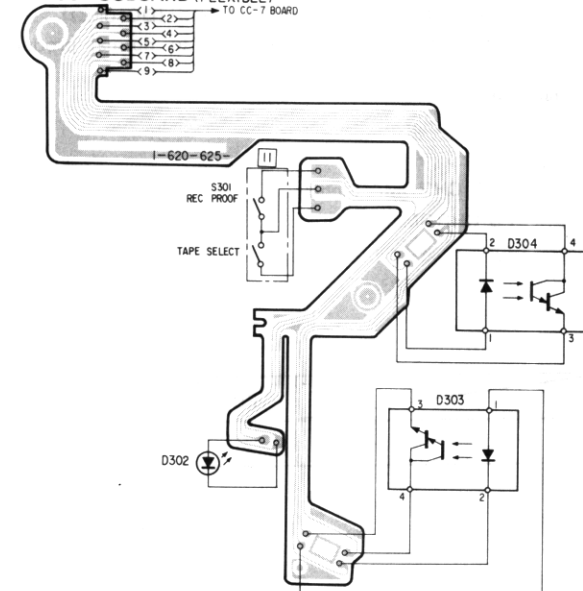
SW-40P BOARD(SOLDER SIDE)



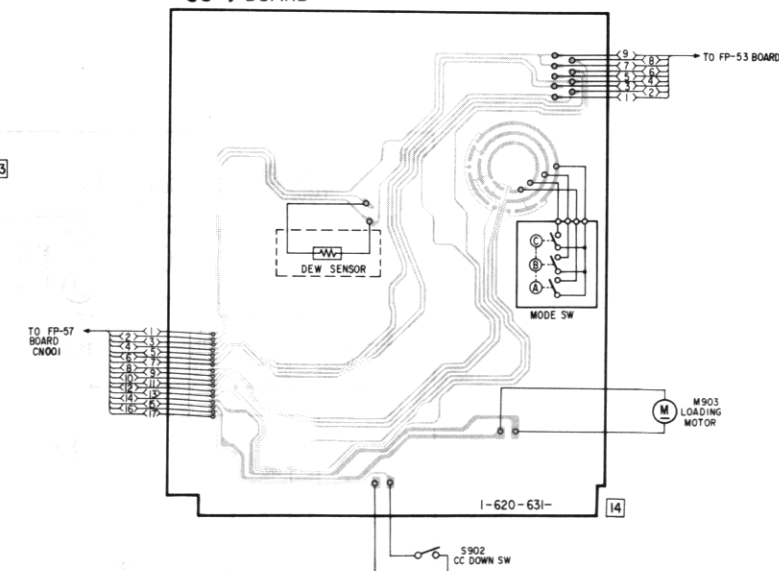
FP-70P BOARD



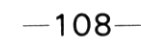
FP-53 BOARD (FLEXIBLE)



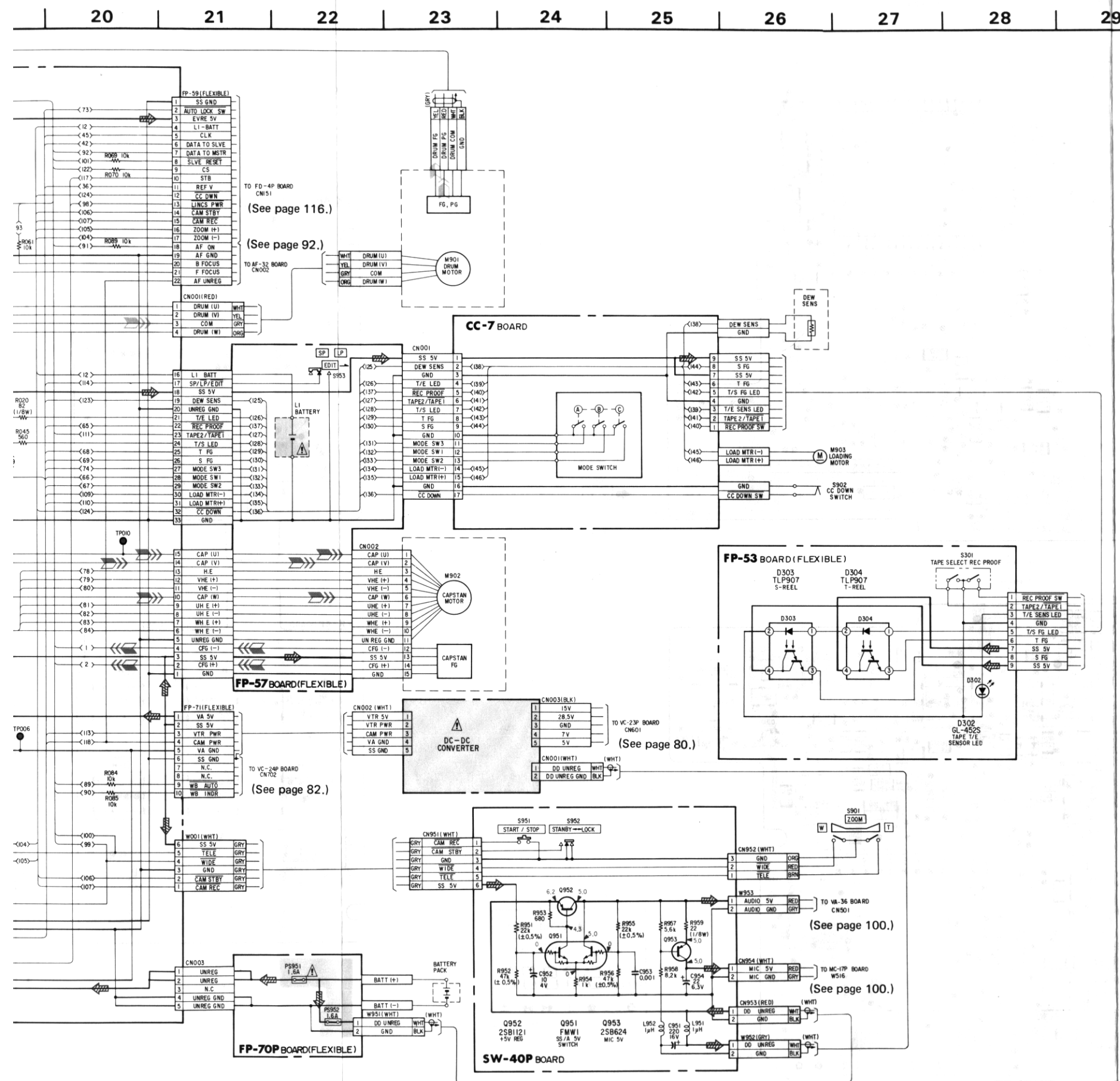
CC-7 BOARD



—Ref. No. SS-81 and SW-40P BOARDS : 1,000 series, FP-53 BOARD : 3,000 series, FP-70P BOARD : 4,000 series, CC-7 BOARD : 5,000 series, FP-57 BOARD : 6,000 series—







- ⊗ : Through hole.
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- Digital transistor (FD-4P board: Q162, Q163): transistor with resistor.

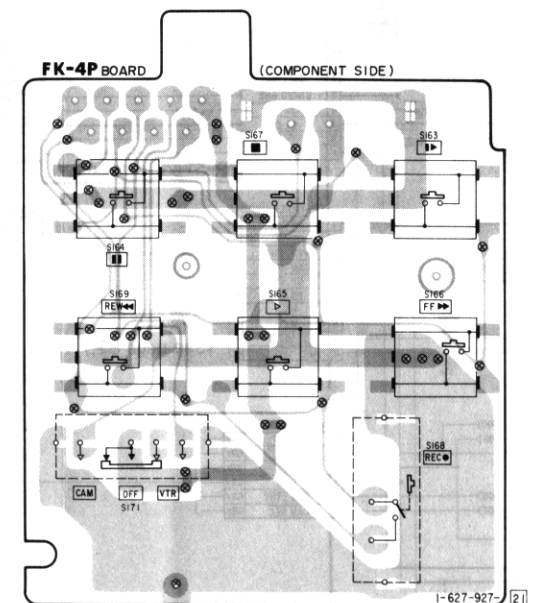
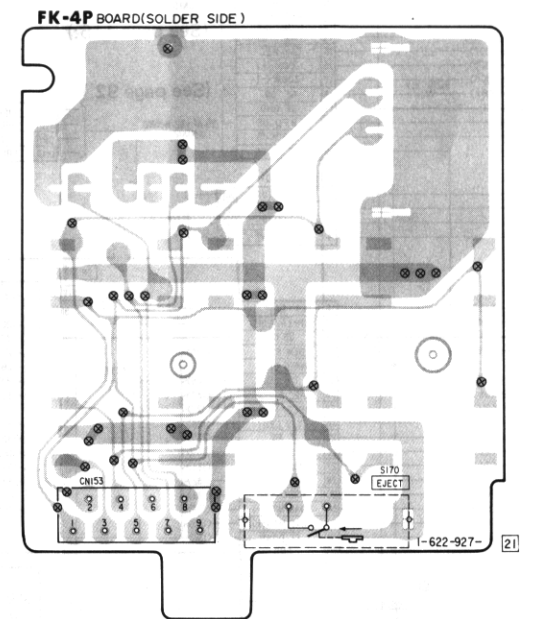
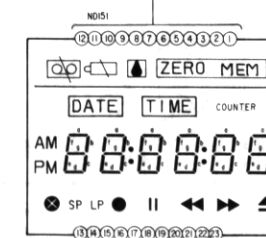
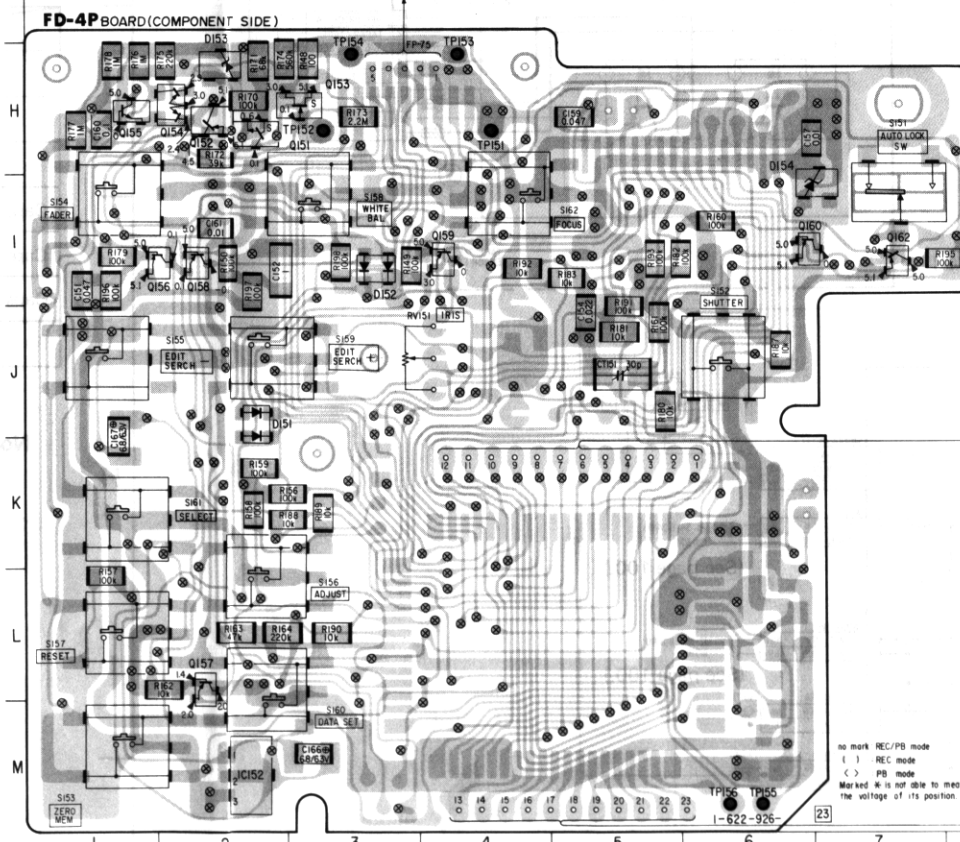
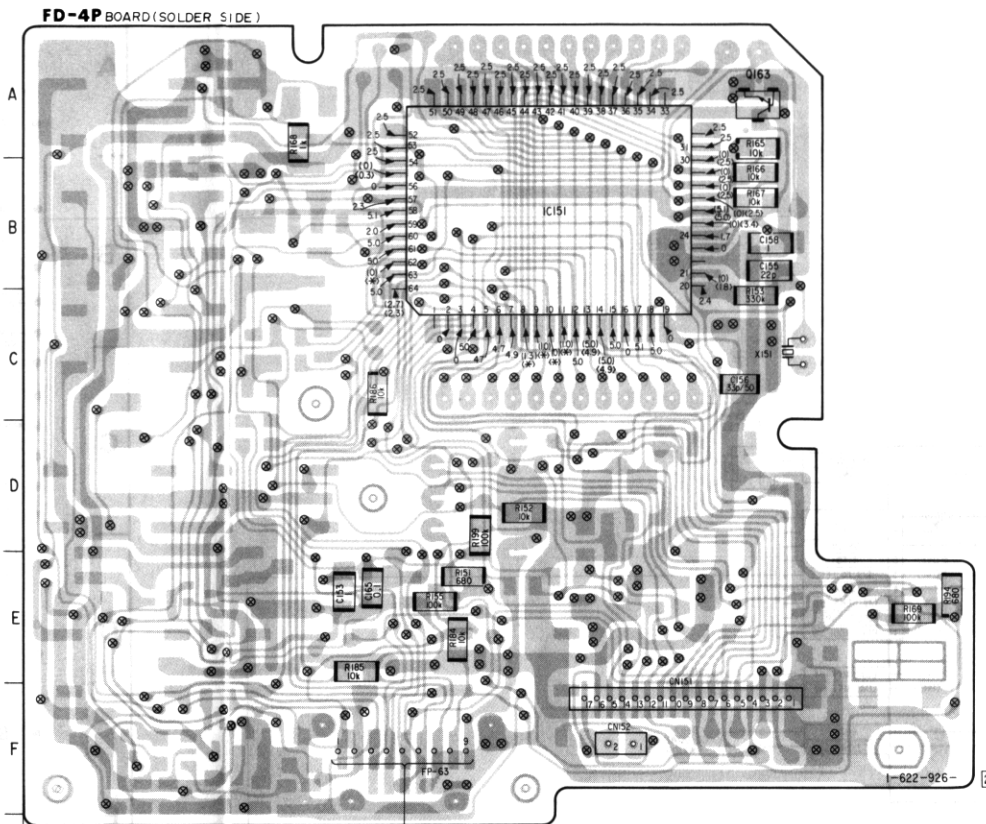
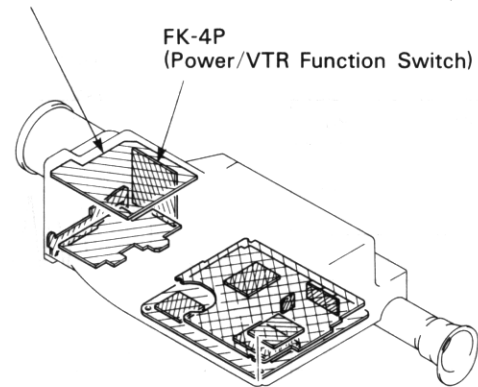
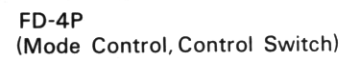
Refer to the FD-4P board schematic diagram for digital transistor.

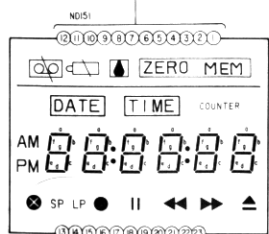
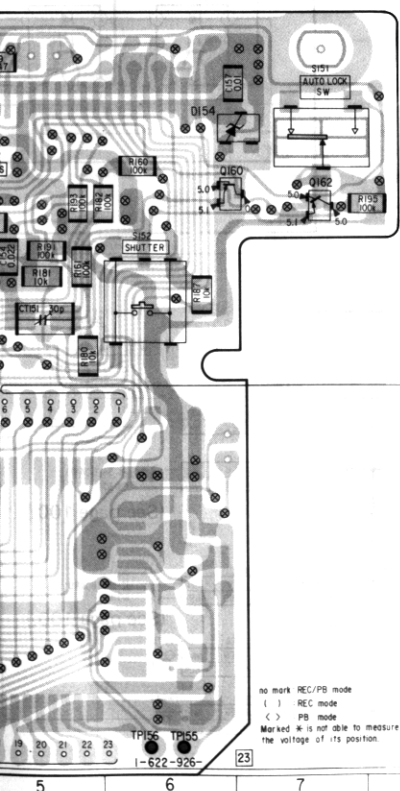
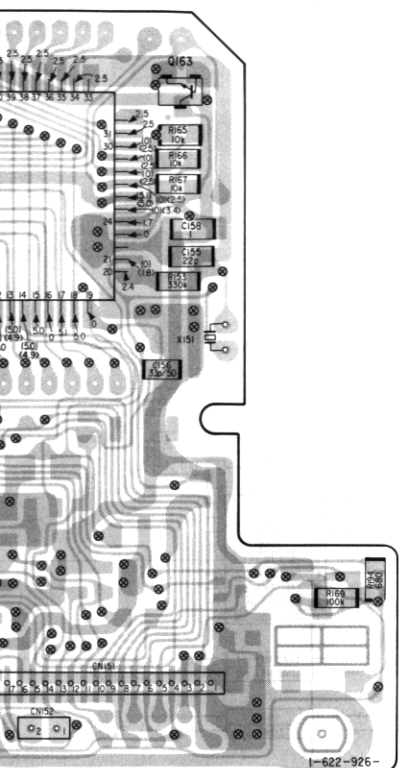
Pattern face side: Parts on the pattern face side seen from (Solder Side) the pattern face are indicated.

Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated.

When indicating parts by reference number, please include the board name.

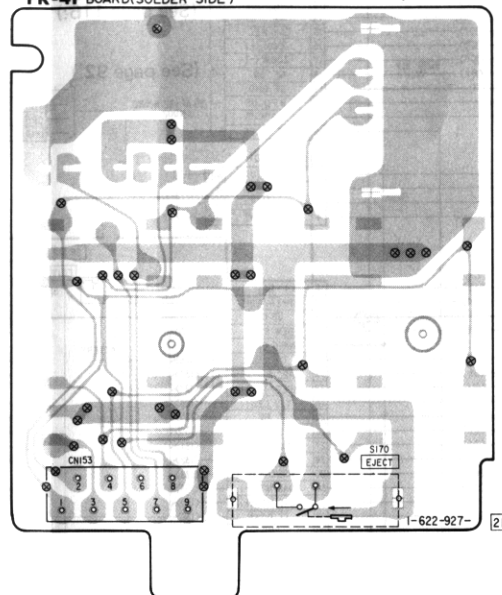
CN151	F-5
CN152	F-5
D151	J-2
D152	I-3
D153	H-2
D155	I-6
FP-63	F-3
FP-57	H-3
IC151	B-4
IC152	M-2
Q151	H-2
Q152	H-2
Q153	H-3
Q154	H-2
Q155	H-1
Q156	L-2
Q157	L-2
Q158	I-2
Q159	I-4
Q160	I-6
Q162	I-7
Q163	A-6



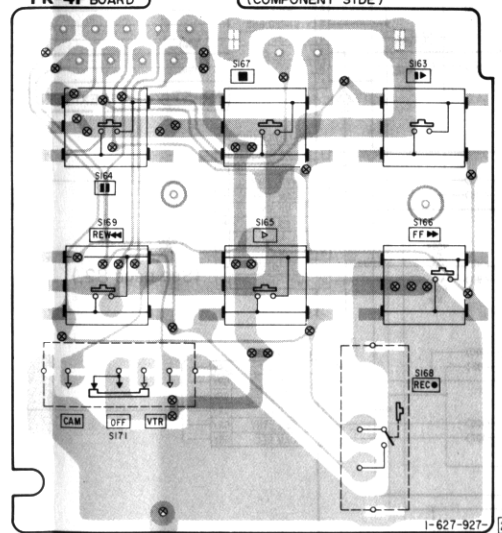


no mark REC/PS mode
() REC mode
() PS mode
Marked * is not able to measure
the voltage of its position.

FK-4P BOARD(SOLDER SIDE)

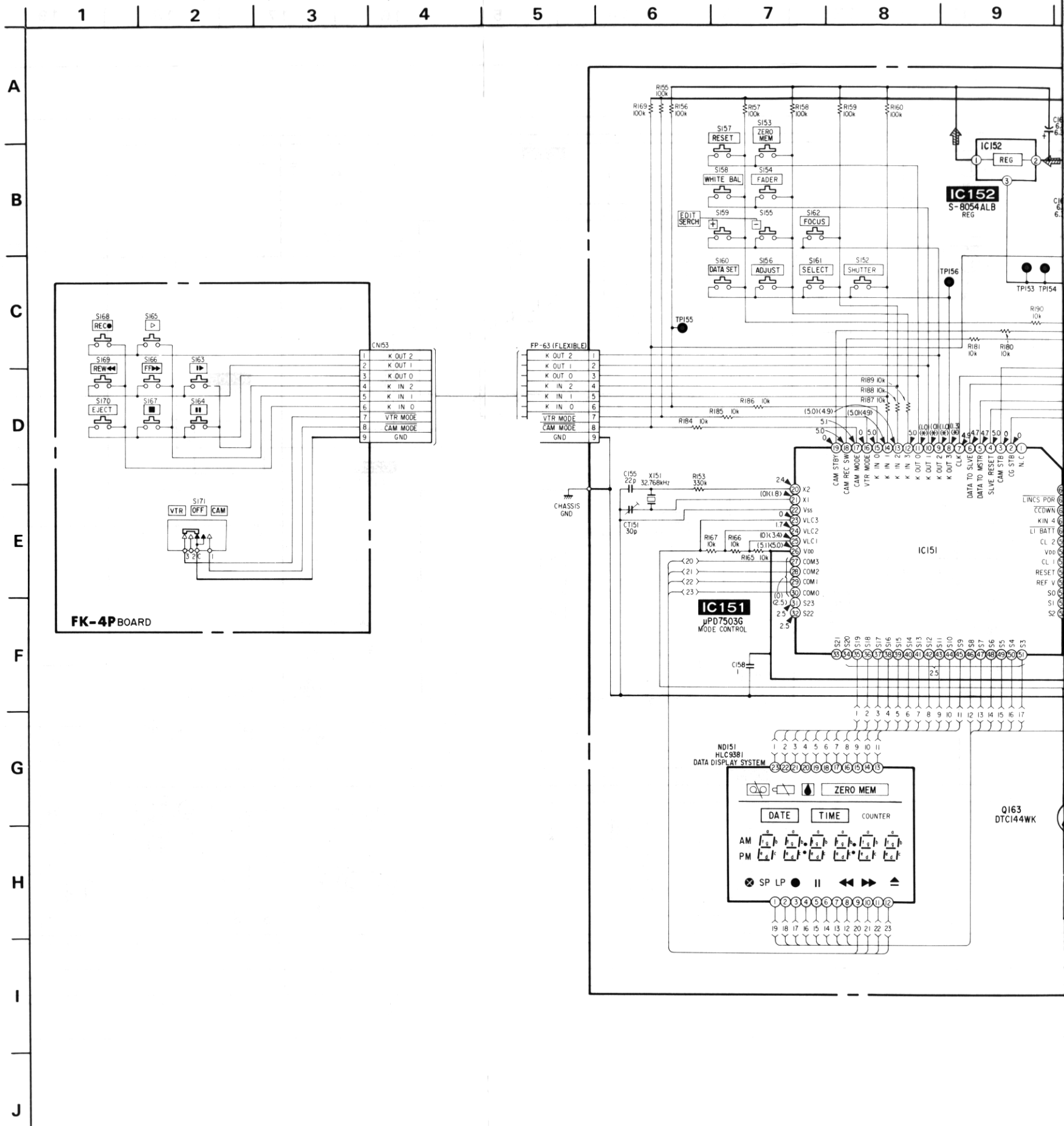


FK-4P BOARD (COMPONENT SIDE)



FD-4P(MODE CONTROL, CONTROL SWITCH), FK-4P(POWER/VTR FUNCTION SWITCH) SCHEMATIC DIAGRAM

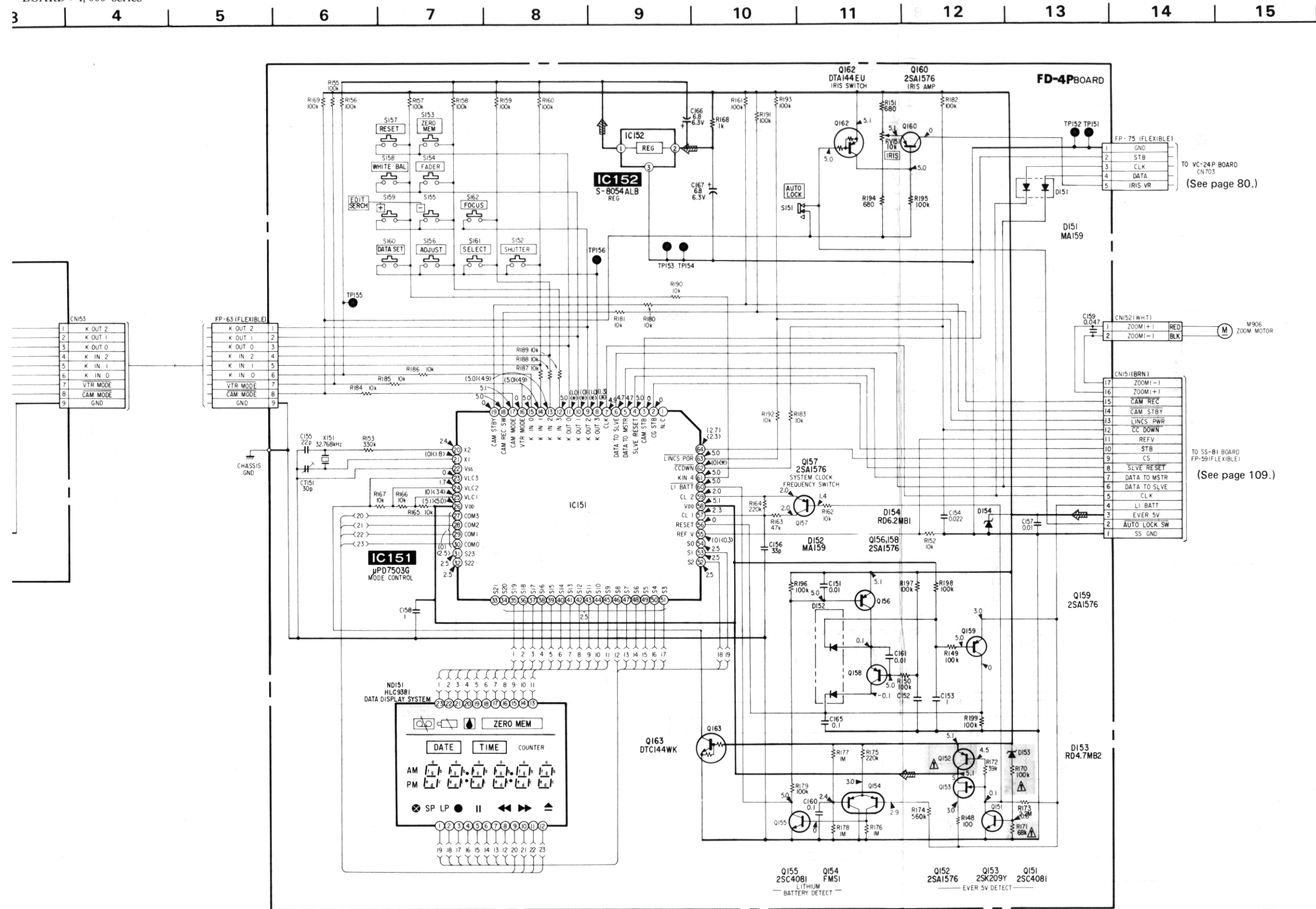
—Ref. No. FD-4P BOARD : 1,000 series, FK-4P BOARD : 4,000 series—



MODE CONTROL MODE CONTROL

TCH), FK-4P(POWER/VTR FUNCTION SWITCH) SCHEMATIC DIAGRAM

BOARD : 4,000 series—



Note:

- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- : panel designation.
- : Nonflammable resistor
- : B+ bus.
- : IN/OUT direction of B+, B- bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a color-bar signal input. (Remove the W331 on VA-36 board. Input point: Pin ① of W331 on VA-36 board. (75 Ω terminated))
- Readings are taken with a digital multimeter (DC10M Ω).
- Voltage variations may be noted due to normal production tolerances.

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

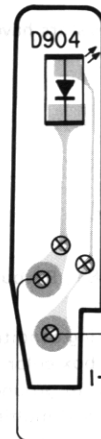
When indicating parts by reference number, please include the board name.

VIEWFINDER VIEWFINDER

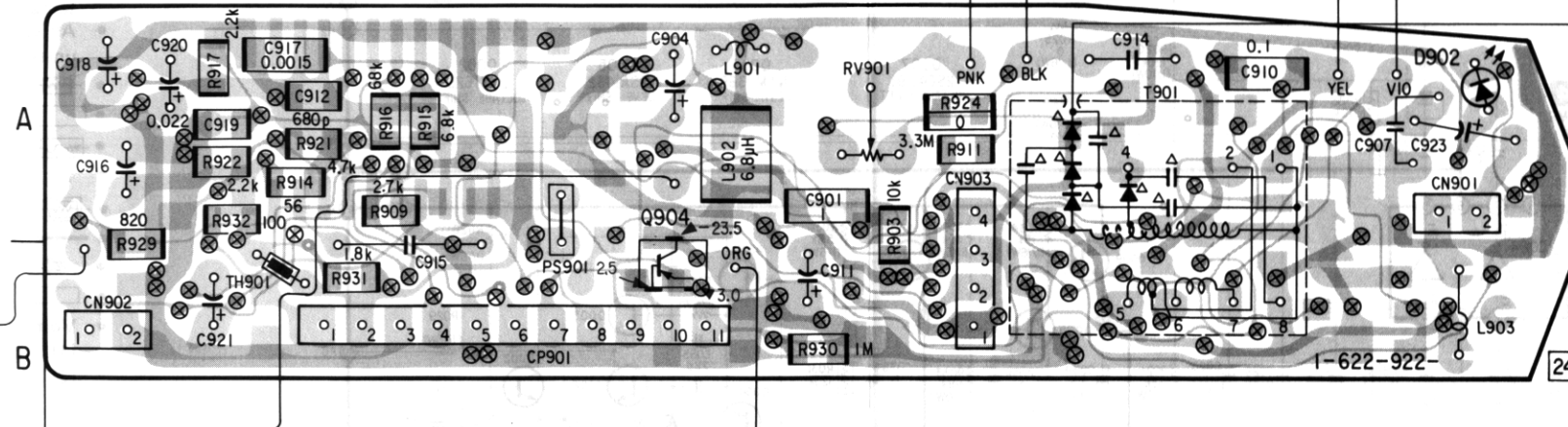
VF-9P(VIEWFINDER), LD-8P(LED) PRINTED WIRING BOARDS

—Ref. No. VF-9P BOARD : 2, 000 series, LD-8P BOARD : 3, 000 series—

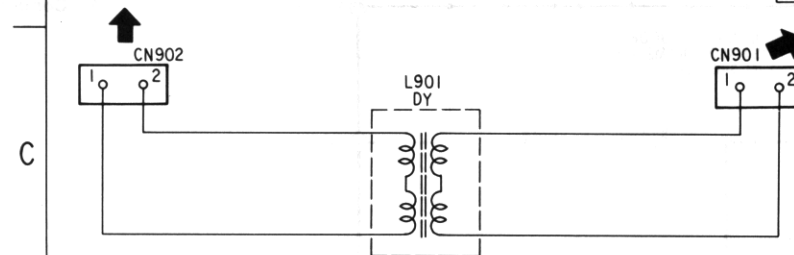
LD-8P BOARD



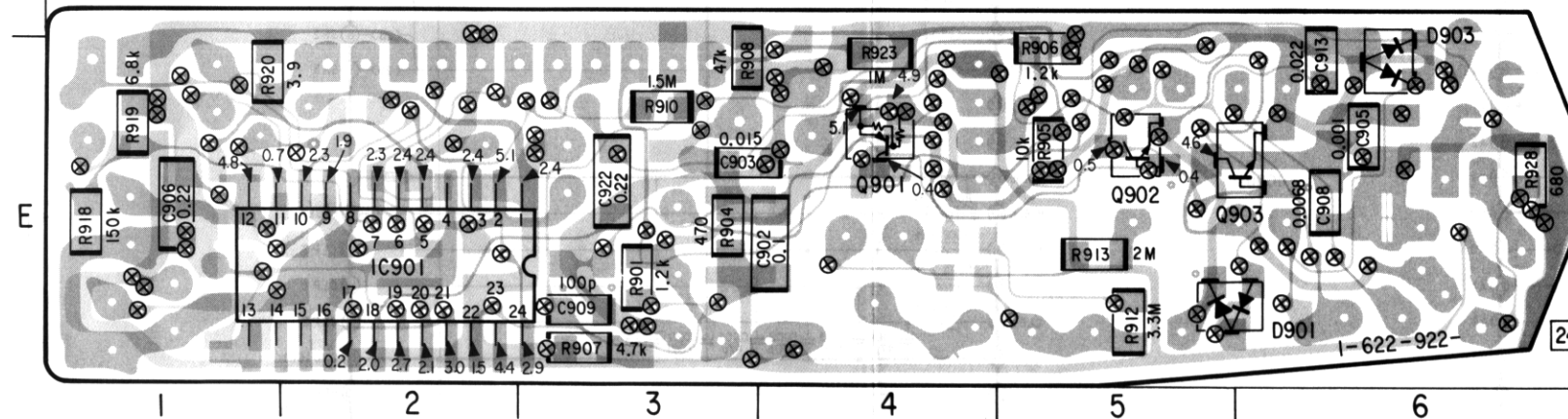
VF-9P BOARD (COMPONENT SIDE)



CN901	A-6
CN902	B-1
CN903	A-4
CN903	A-4
CP901	B-3
D901	E-6
D902	A-6
D903	E-6
IC901	E-2
Q901	E-4
Q902	E-5
Q903	E-5
Q904	B-3
RV901	A-4



VF-9P BOARD (SOLDER SIDE)



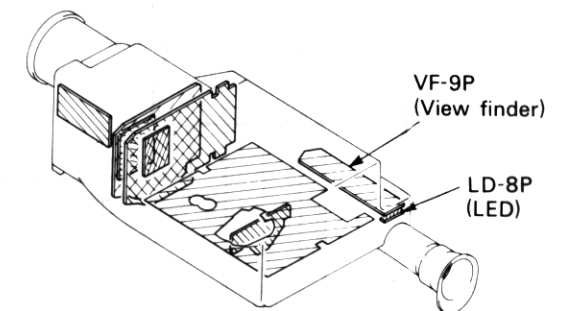
Note:

- ⊗ : Through hole.
- ■ : Pattern from the side which enables seeing.
- ■ : Pattern of the rear side.

Caution:

Pattern face side: Parts on the pattern face side seen from (Solder Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated.

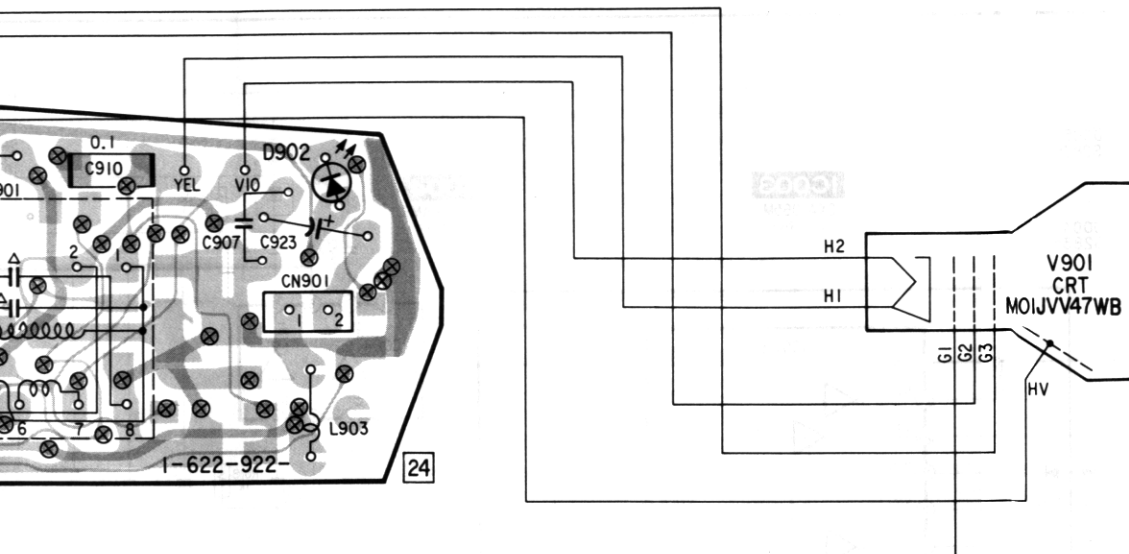
When indicating parts by reference number, please include the board name.



no mark: REC/PB mode

VF-9P(VIEWFINDER),LD-8P(LED) SCHEMATIC DIAGRAM

—Ref. No. VF-9P BOARD : 2, 000 series, LD-8P BOARD : 3, 000 series—



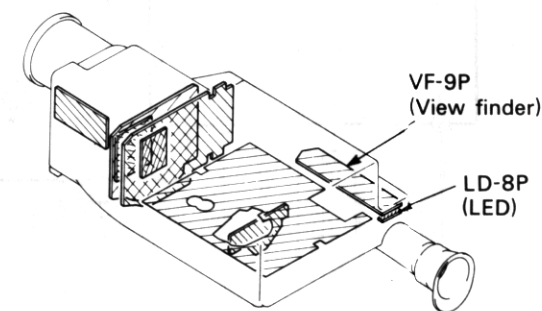
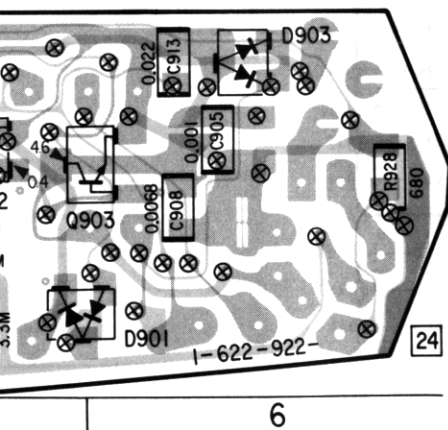
Note:

- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▩ : Pattern of the rear side.

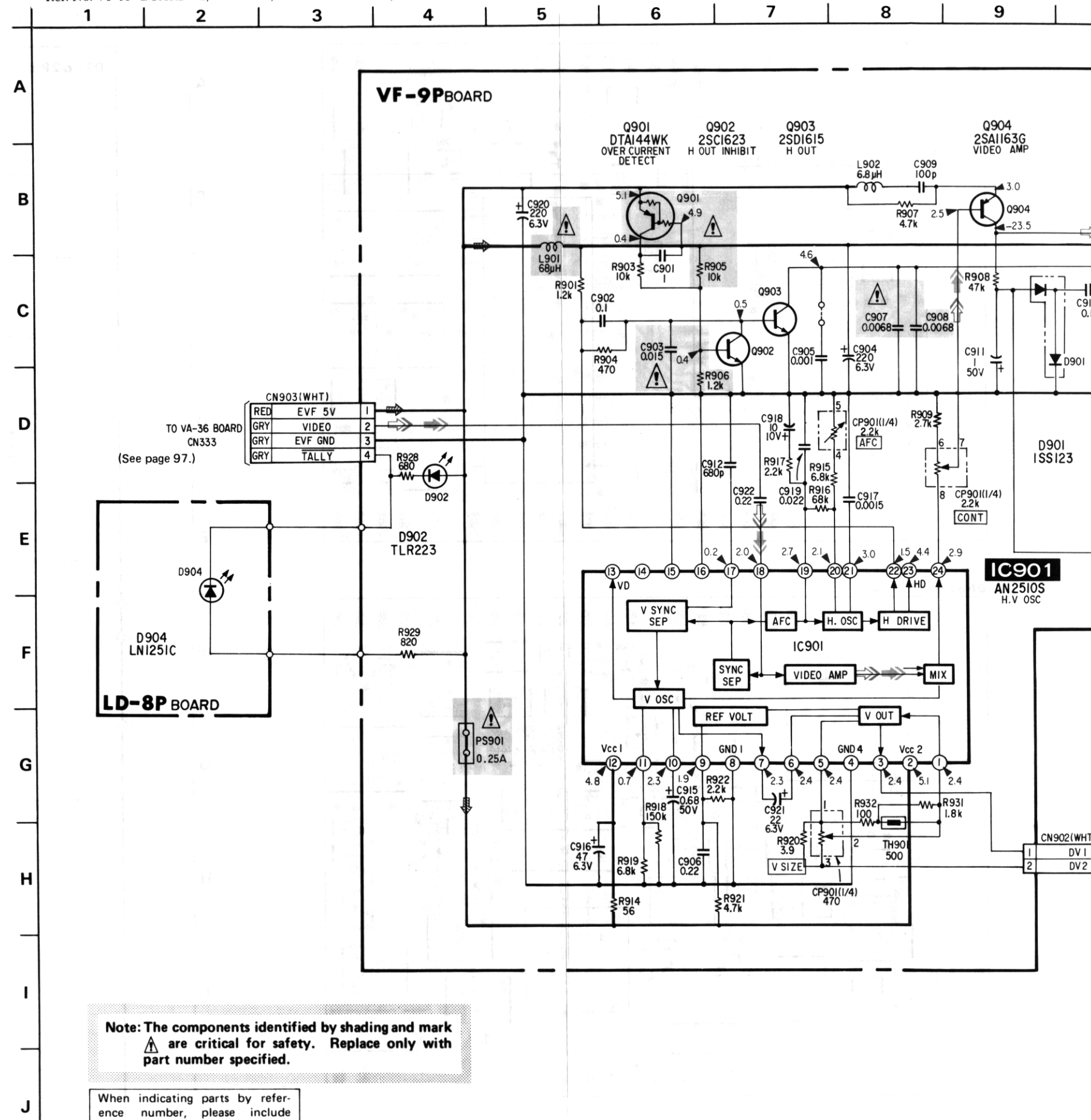
Caution:

Pattern face side: Parts on the pattern face side seen from (Solder Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated.

When indicating parts by reference number, please include the board name.



no mark: REC/PB mode

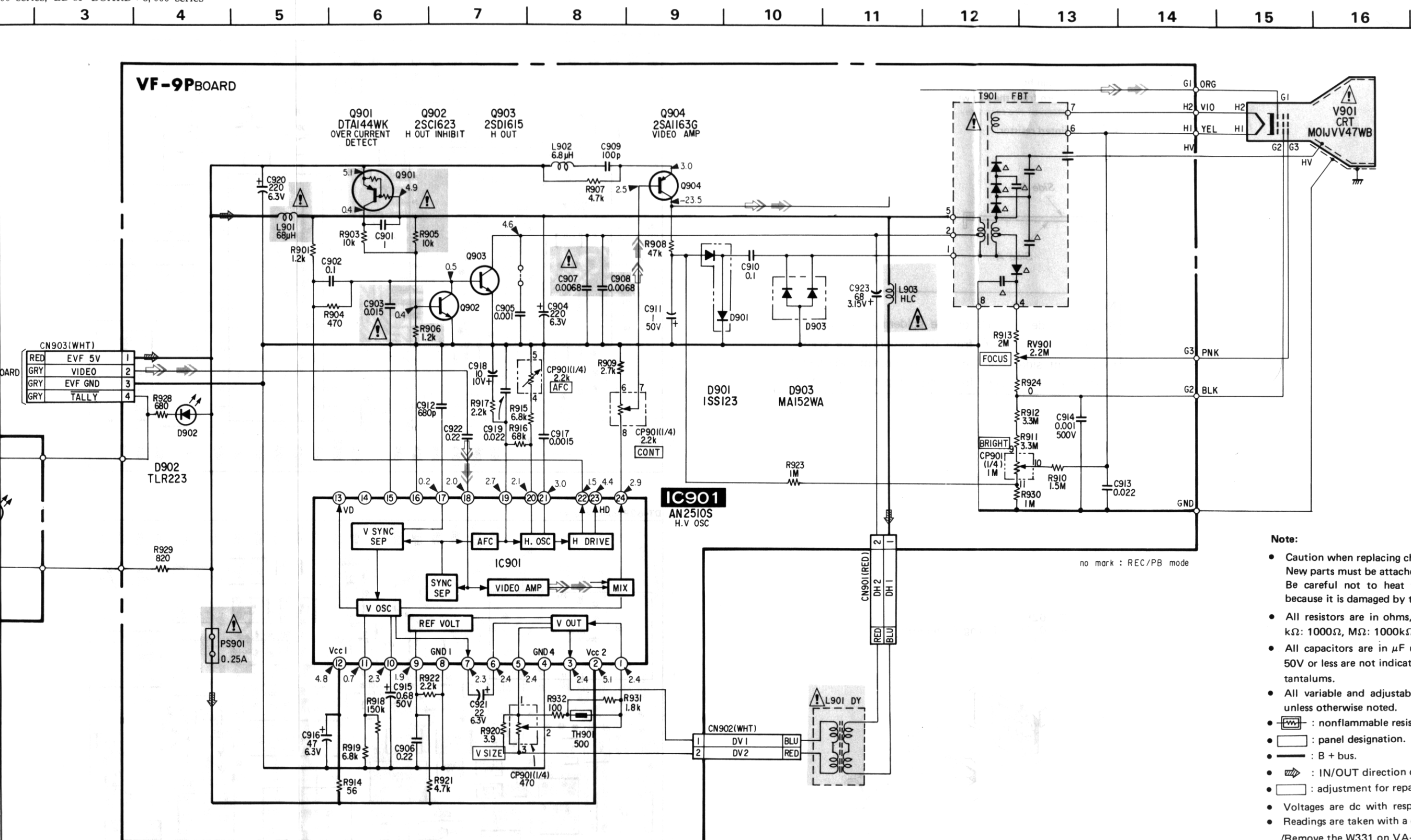


Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

P(LED) SCHEMATIC DIAGRAM

00 series, LD-8P BOARD : 3,000 series—



Note:

- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF. 50V or less are not indicated except for electrolytics. and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⎓: nonflammable resistor.
- : panel designation.
- : B + bus.
- : IN/OUT direction of B+, B- bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a color-bar signal input. (Remove the W331 on VA-36 board. Input point: Pin ① of W331 on VA-36 board. (75Ω terminated))
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- Signal path**
 - : REC Y/CHROMA Signal
 - : PB Y/CHROMA Signal

Parts identified by shading and mark for safety. Replace only with specified.

Parts by reference include

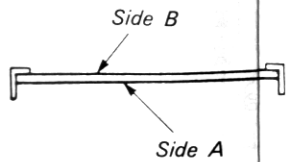
CCD-V90E

DT-62P(CCD DRIVE, TIMING GENERATOR) PRINTED WIRING BOARD

DT-62P(CCD DRIVE, TIMING GENERATOR) SCHEMATIC DIAGRAM

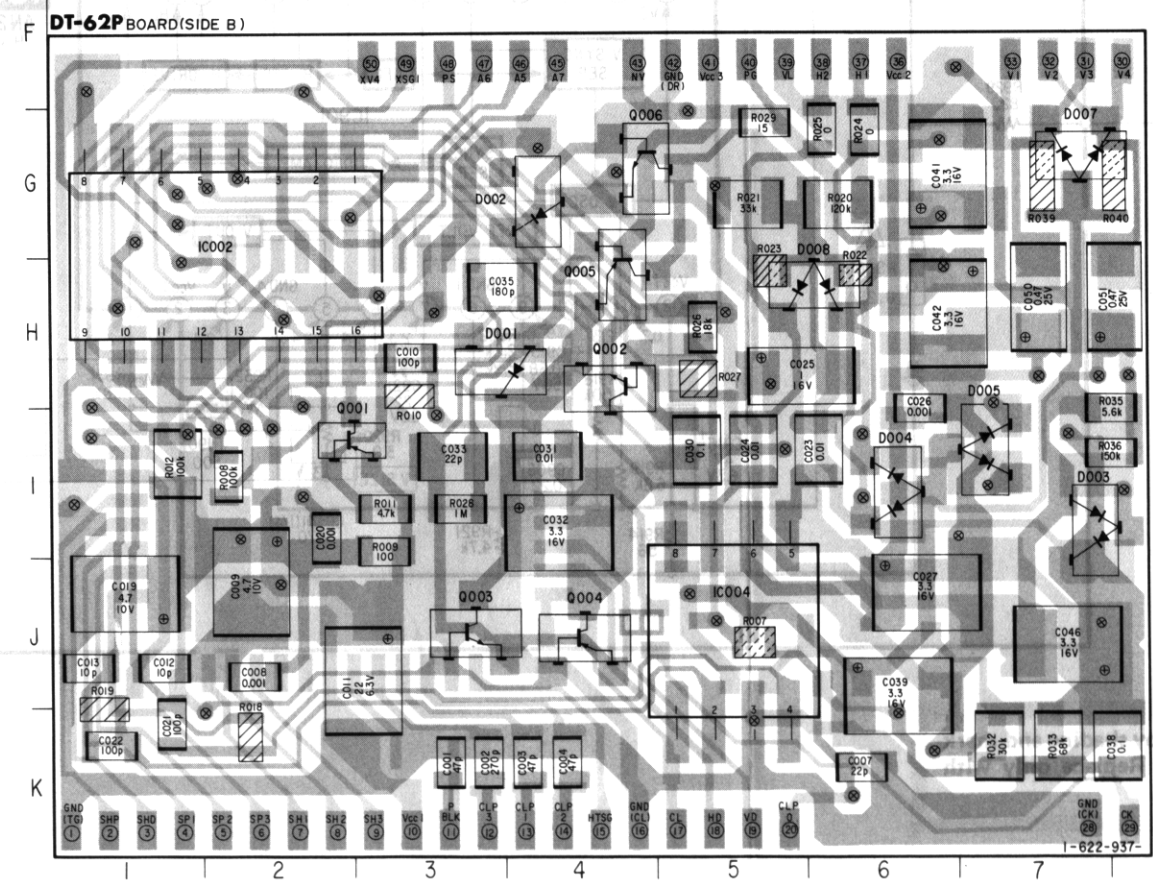
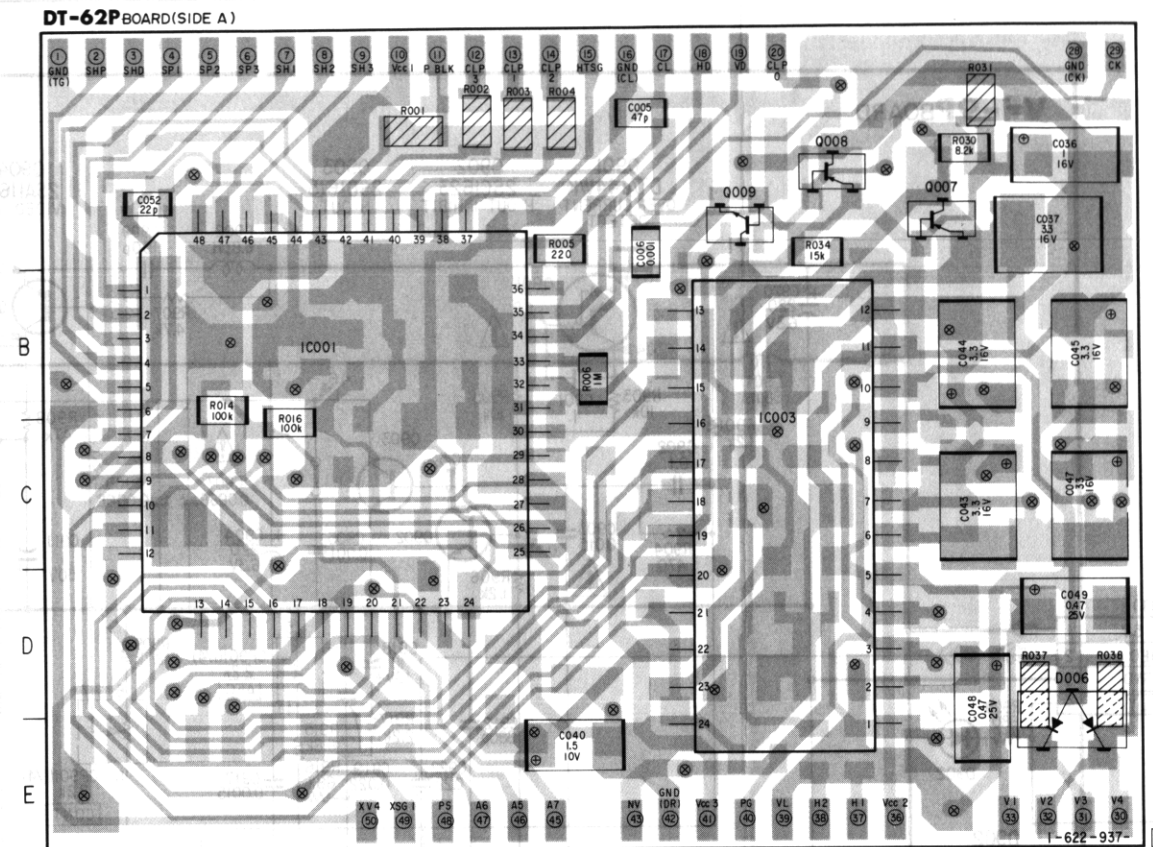
Note:

- ⊗ : Through hole.
- ■ : Pattern from the side which enables seeing.
- — : Pattern from the rear side.
- ▨ : Printed resistor.

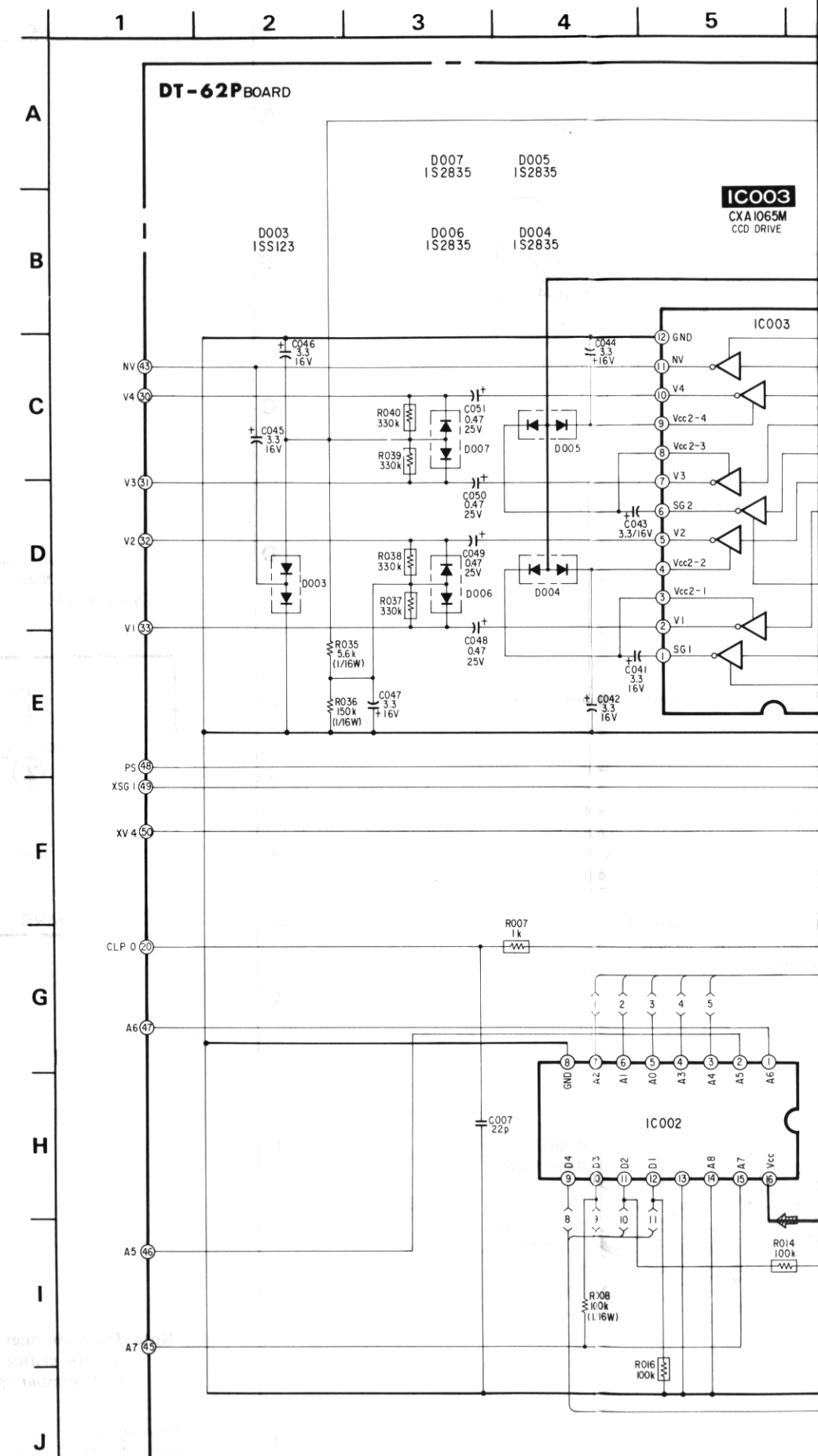
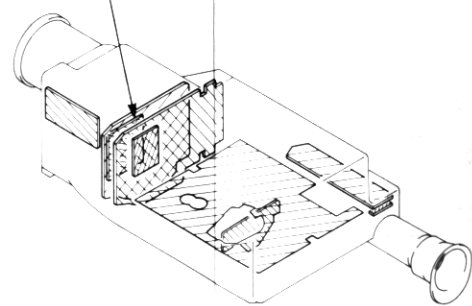


Note

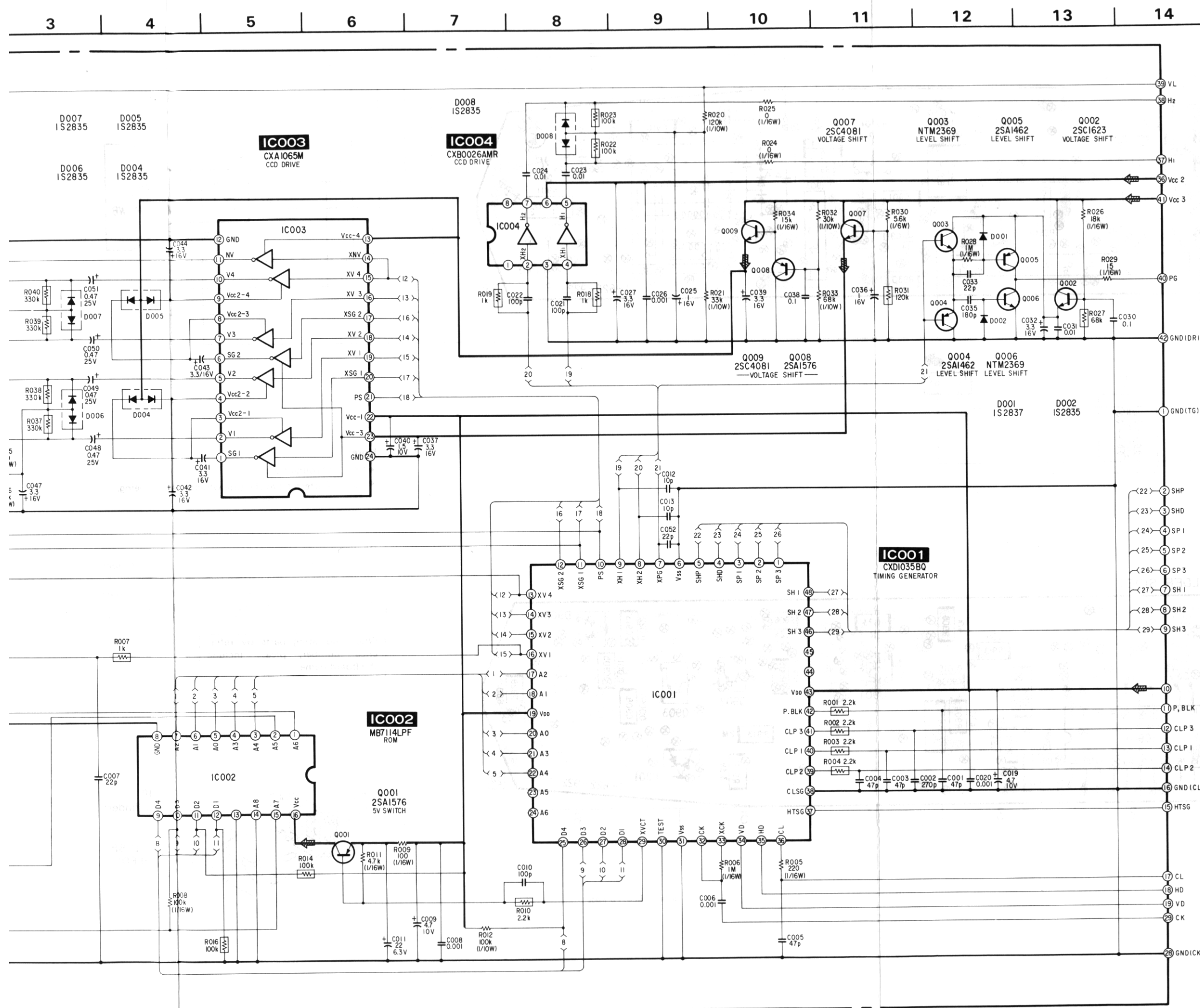
Soldering side : Parts on the soldering side being (SIDE A) seen from the soldering are stated.
Component side : Parts on the component side being (SIDE B) seen from the component are stated.



DT-62P
(CCD Drive, Timing Generator)



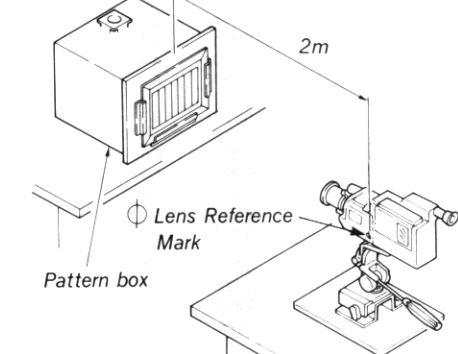
ERATOR) SCHEMATIC DIAGRAM



Note:

- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, $\frac{1}{2}$ W unless otherwise noted. k Ω : 1000 Ω , M Ω : 1000k Ω .
- All capacitors are in μ F unless otherwise noted. pF: μ F. 50V or less are not indicated except for electrolytics, and tantalums.
- All variable and adjustable resistors have characteristics curve B, unless otherwise noted.
- : printed resistor.
- : panel designation.
- : fusible resistor.
- : internal component.
- : nonflammable resistor.
- : B + bus.
- : IN/OUT direction of B+, B- bus.
- : adjustment for repair.
- Voltage and waveform measuring conditions:
 - Sample object: Pattern box color bars.
 - Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

1. Connection



- Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

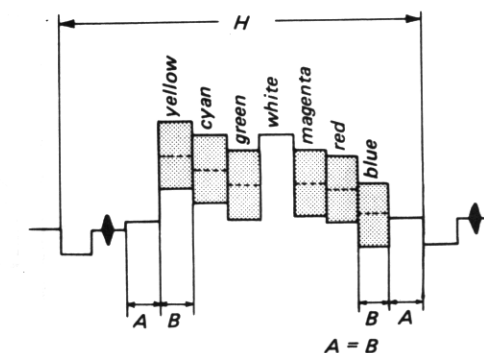


Fig. a Camera output waveform of TP801 on VC-24P board.

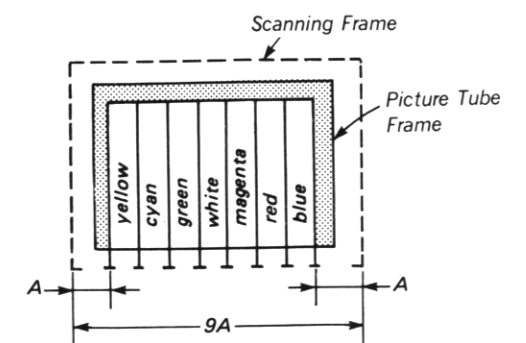
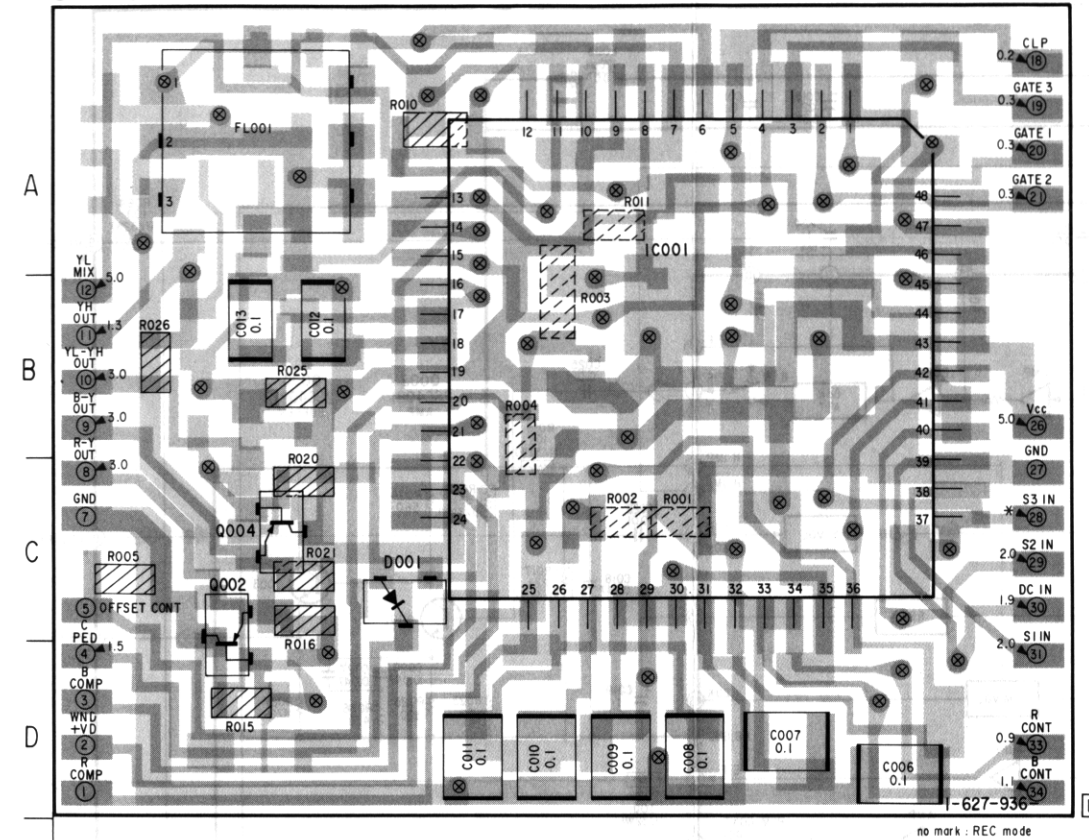


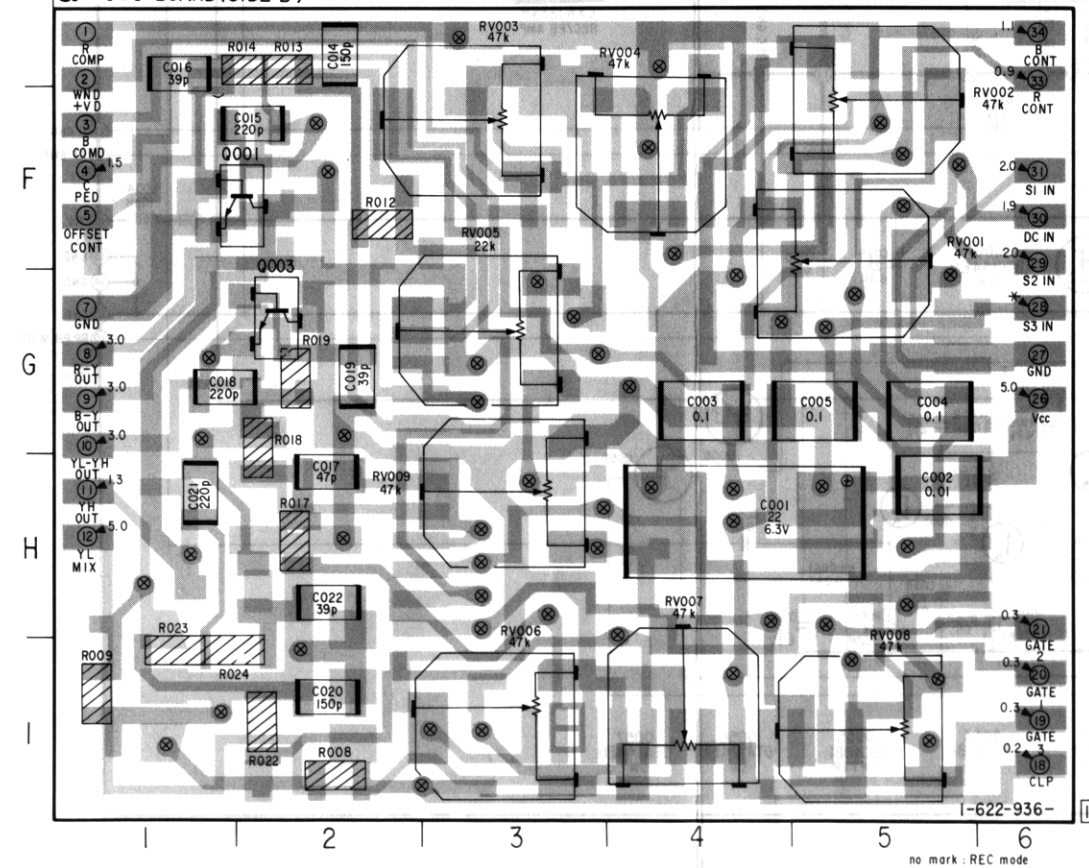
Fig. b Picture of TV monitor screen

CP-19P(CAMERA MATRIX) PRINTED WIRING BOARD

CP-19P BOARD(SIDE A)

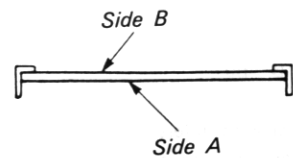


CP-19P BOARD (SIDE B)



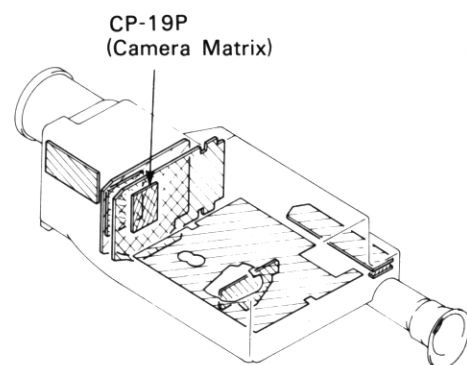
Note:

- ⊗ : Through hole.
- ■ : Pattern from the side which enables seeing.
- ■ : Pattern of the rear side.
- ▨ : Printed resistor.

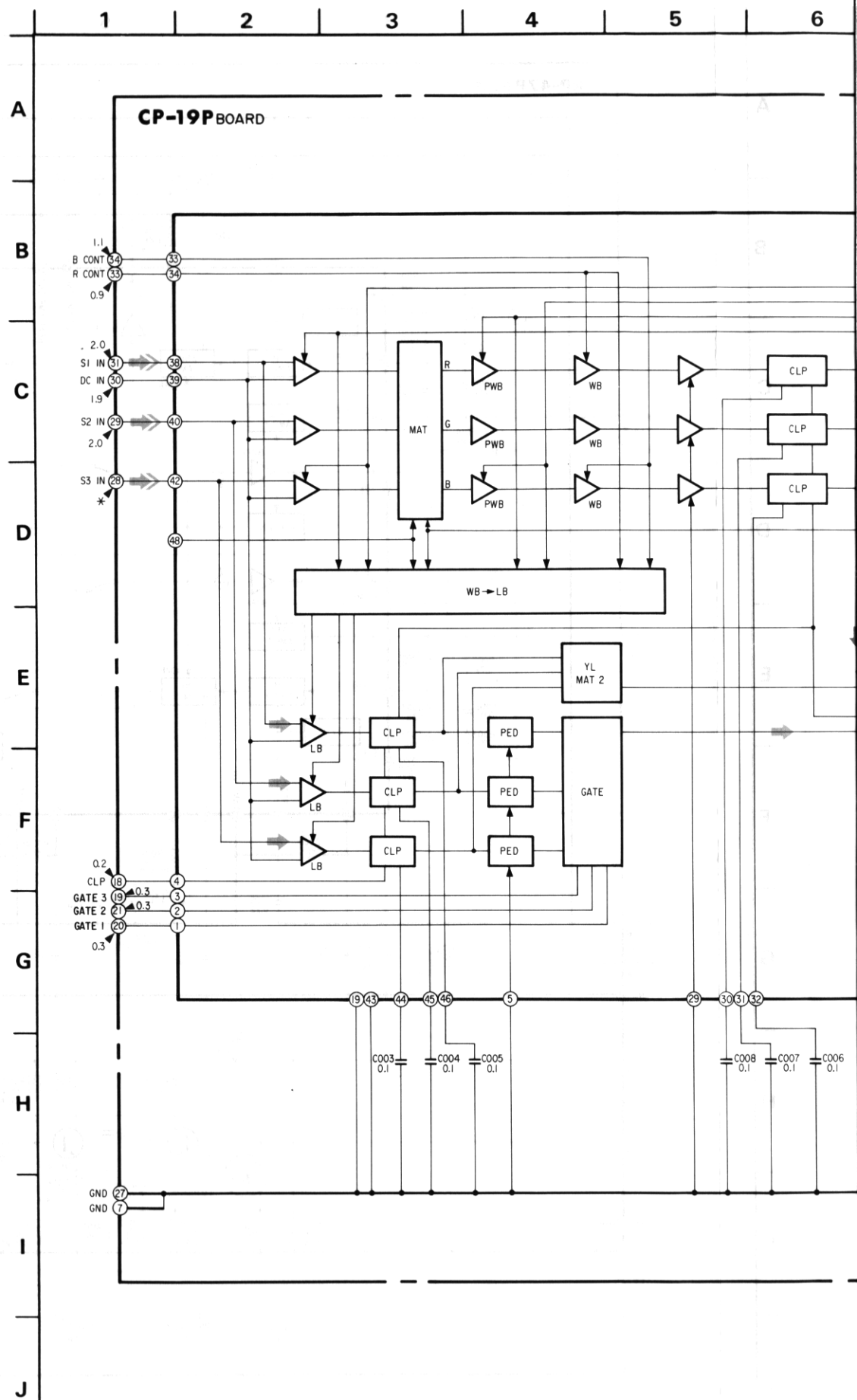


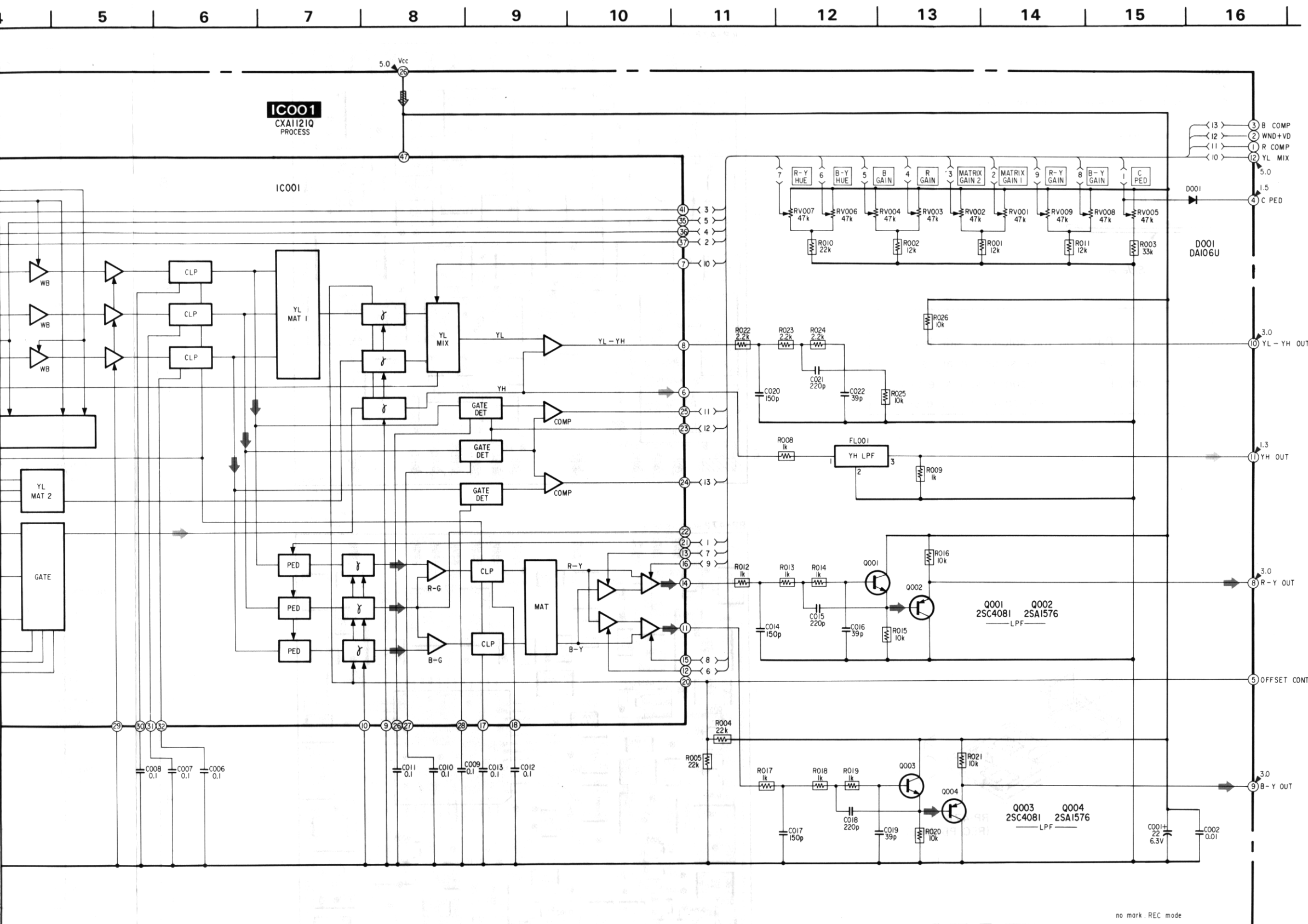
Note

Soldering side (SIDE A)	: Parts on the soldering side being seen from the soldering are stated.
Component side (SIDE B)	: Parts on the component side being seen from the component are stated.



CP-19P(CAMERA MATRIX) SCHEMATIC DIAGRAM



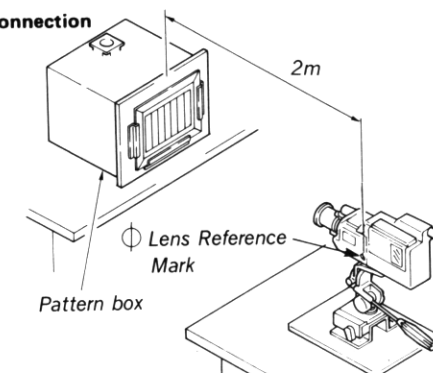


- Signal path
- ➡ : REC Y Signal
- ➡ : REC CHROMA Signal
- ➡ : REC Y/CHROMA Signal

Note:

- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the head.
- All resistors are in ohms, $\frac{1}{2}$ W unless otherwise noted. k Ω : 1000 Ω , M Ω : 1000k Ω .
- All capacitors are in μ F unless otherwise noted. pF: μ F. 50V or less are not indicated except for electrolytics, and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : printed resistor.
- : panel designation.
- : fusible resistor.
- : internal component.
- : nonflammable resistor.
- : B + bus.
- : IN/OUT direction of B+, B - bus.
- : adjustment for repair.
- Voltage and waveform measuring conditions:
(1) Sample object: Pattern box color bars.
(2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

1. Connection



2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

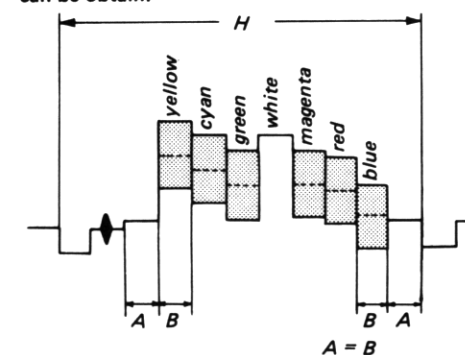


Fig. a Camera output waveform of TP801 on VC-24P board.

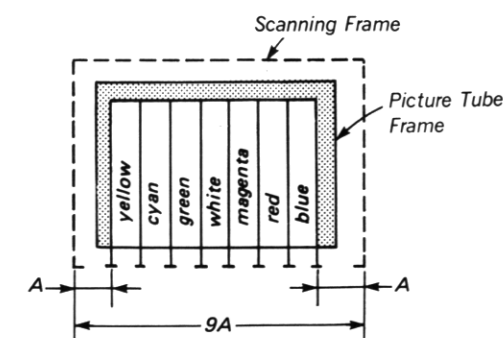


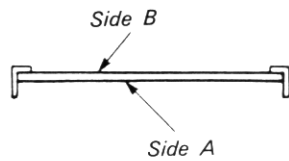
Fig. b Picture of TV monitor screen.

RP-47P(REC/PB AMP) PRINTED WIRING BOARD

RP-47P(REC/PB AMP) SECHMATIC DIAGRAM

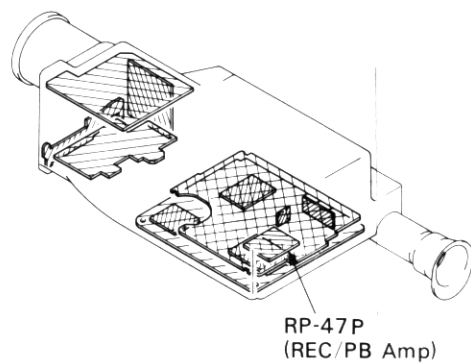
Note:

-  : Through hole.
-  : Pattern from the side which enables seeing.
-  : Pattern from the top.
-  : Printed resistor.



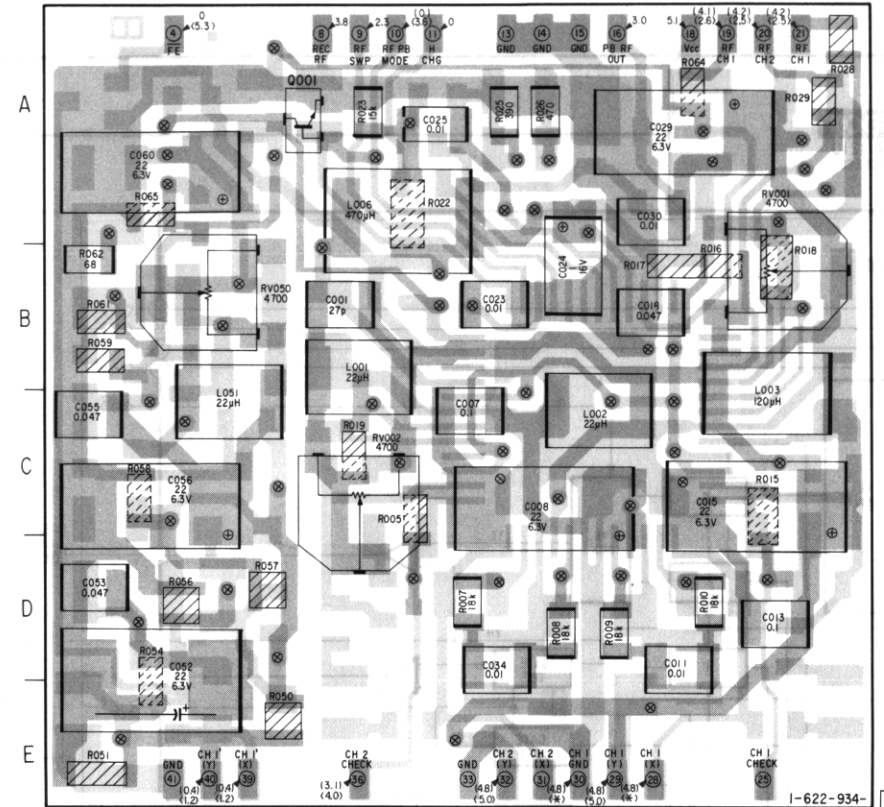
Note

Soldering side (SIDE A)	: Parts on the soldering side being seen from the soldering are stated.
Component side (SIDE B)	: Parts on the component side being seen from the component are stated.

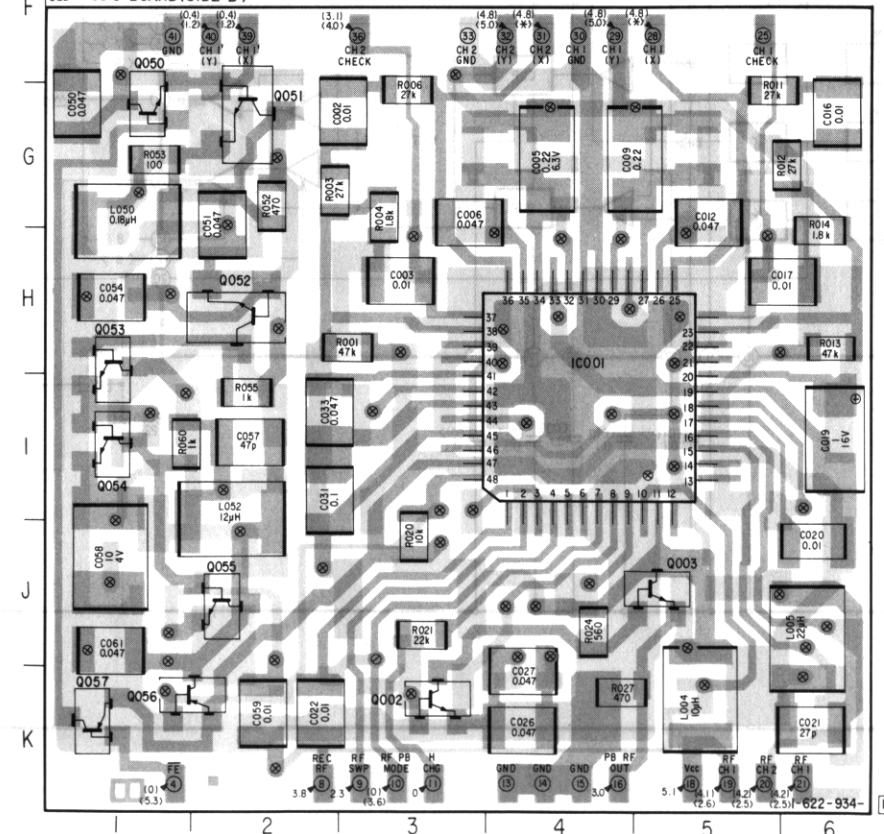


RP-47P
(REC/PB Amp)

RP-47P BOARD(SIDE A)

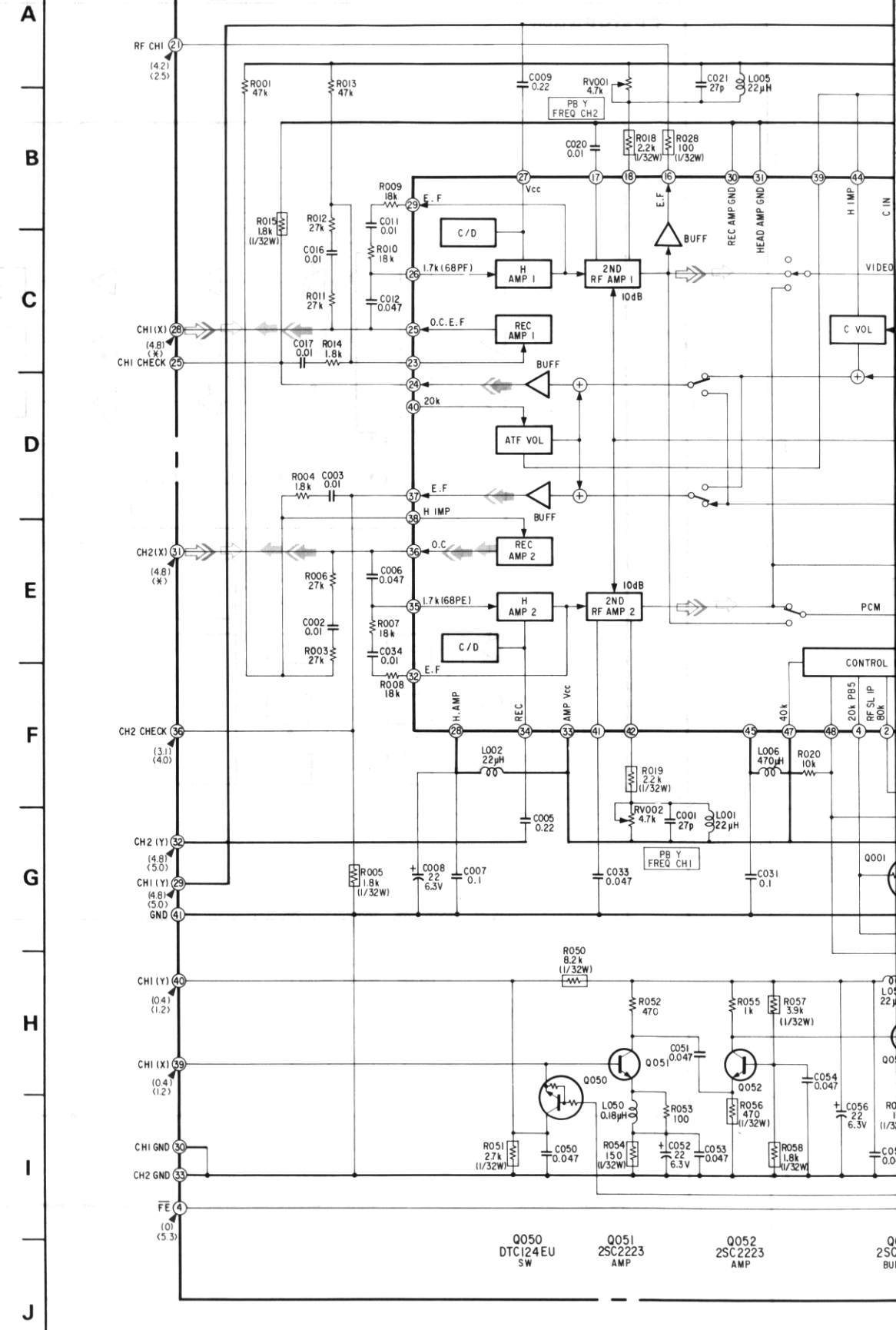


RP-47P BOARD(SIDE B)

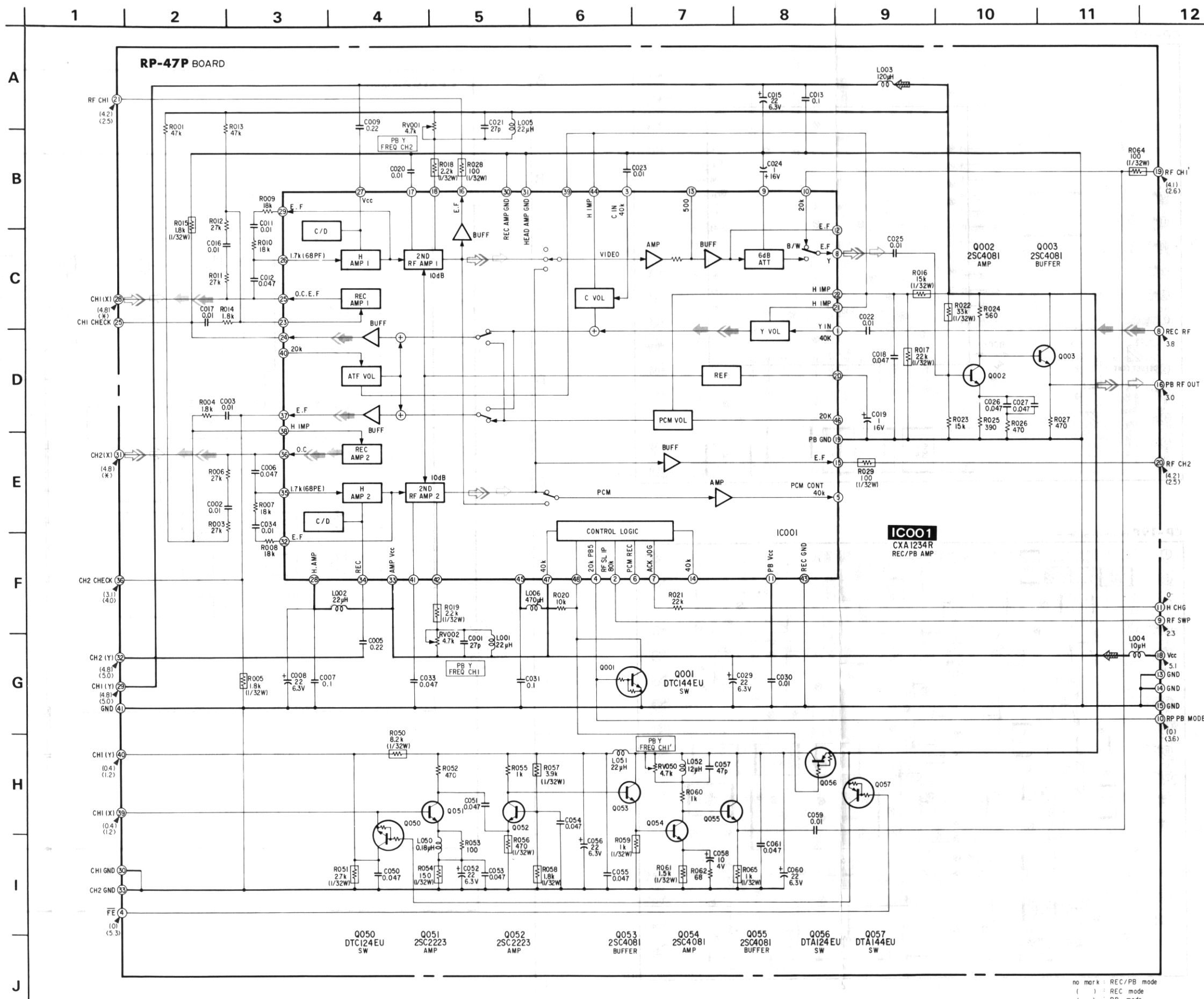


no mark : REC/PB mode
() : REC mode
() : PB mode
Marked * is not able to
measure the voltage of
its position

RP-47P BOARD



RP-47P(REC/PB AMP) SCHEMATIC DIAGRAM

**Note:**

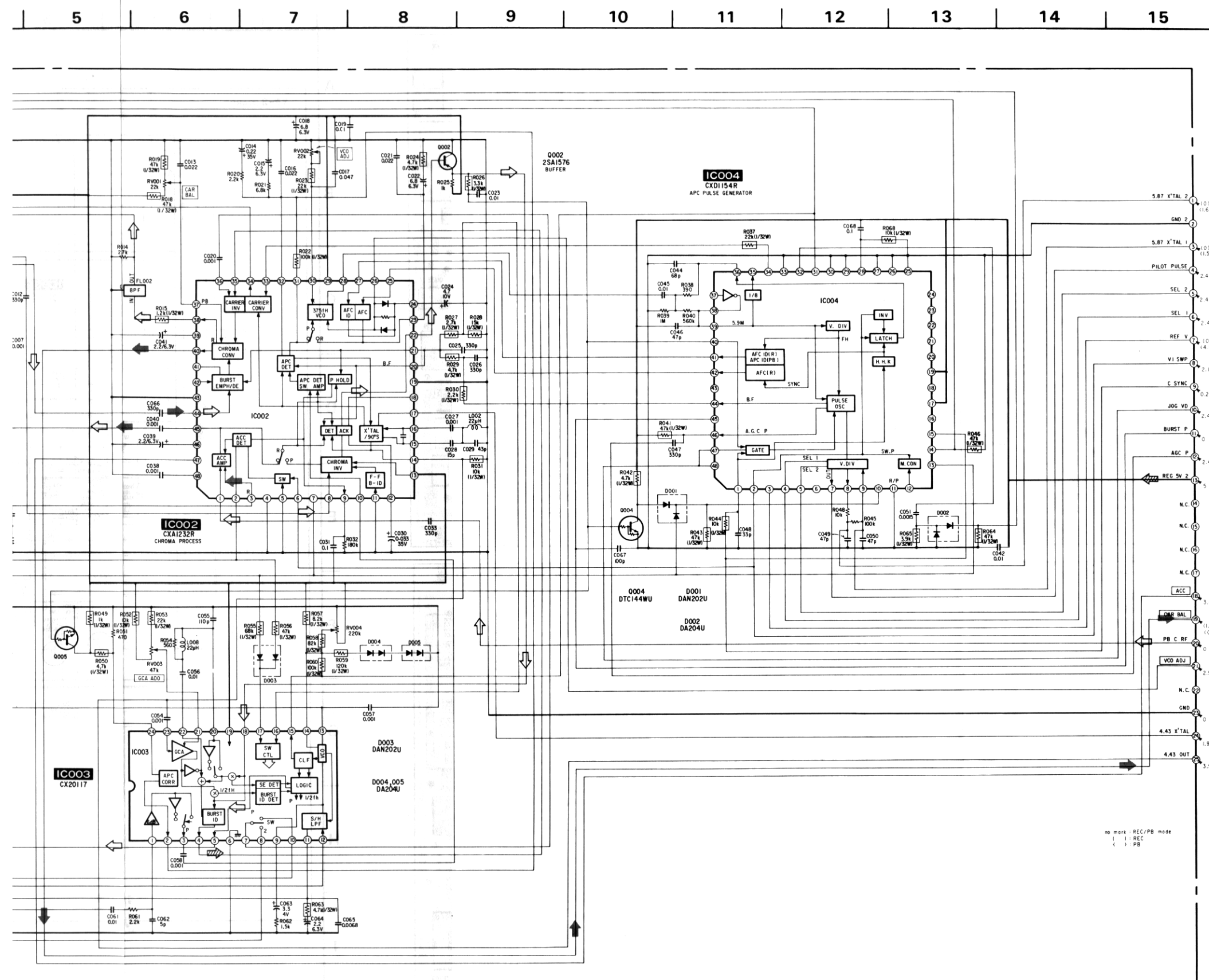
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, $\frac{1}{2}$ W unless otherwise noted.
k Ω : 1000 Ω , M Ω : 1000k Ω .
- All capacitors are in μ F unless otherwise noted. pF : μ F.
50V or less are not indicated except for electrolytics, and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : printed resistor.
- : panel designation.
- : Nonflammable resistor
- : B+ bus.
- : IN/OUT direction of B+, B- bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a color-bar signal input.

(Remove the W331 on VA-36 board.)
Input point: Pin ① of W331 on VA-36 board.
(75 Ω terminated)

Signal path

- : REC Y/CHROMA Signal
- : PB Y/CHROMA Signal
- : REC AUDIO Signal
- : PB AUDIO Signal

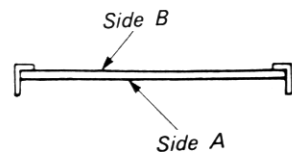
CC-10(CHROMA PROCESS, APC PULSE GENERATOR) SCHEMATIC DIAGRAM

**Note:**

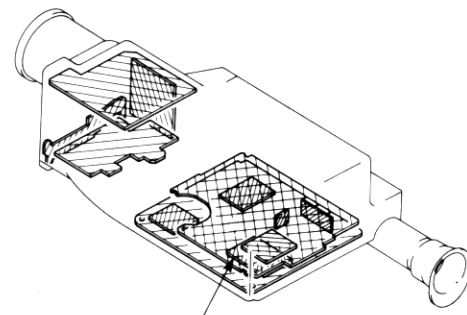
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the head.
- All resistors are in ohms, $\frac{1}{6}$ W unless otherwise noted.
k Ω : 1000 Ω , M Ω : 1000k Ω .
- All capacitors are in μ F unless otherwise noted. pF: μ F.
50V or less are not indicated except for electrolytics, and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : panel designation.
- : fusible resistor.
- $\triangle$: internal component.
- : nonflammable resistor.
- : B + bus.
- : IN/OUT direction of B+, B- bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a color-bar signal input.
(Remove the W331 on VA-36 board.
Input point: Pin ① of W331 on VA-36 board.)
(75 Ω terminated)
- Readings are taken with a digital multimeter (DC10M Ω).
- Voltage variations may be noted due to normal production tolerances.
- **Signal path**
 : REC CHROMA Signal
 : PB CHROMA Signal

YP-8(Y PROCESS, COMB FILTER) PRINTED WIRING BOARD

- Note:
- ⊗ : Through hole.
 - : Pattern from the side which enables seeing.
 - : Pattern of the rear side.
 - ▨ : Printed resistor.



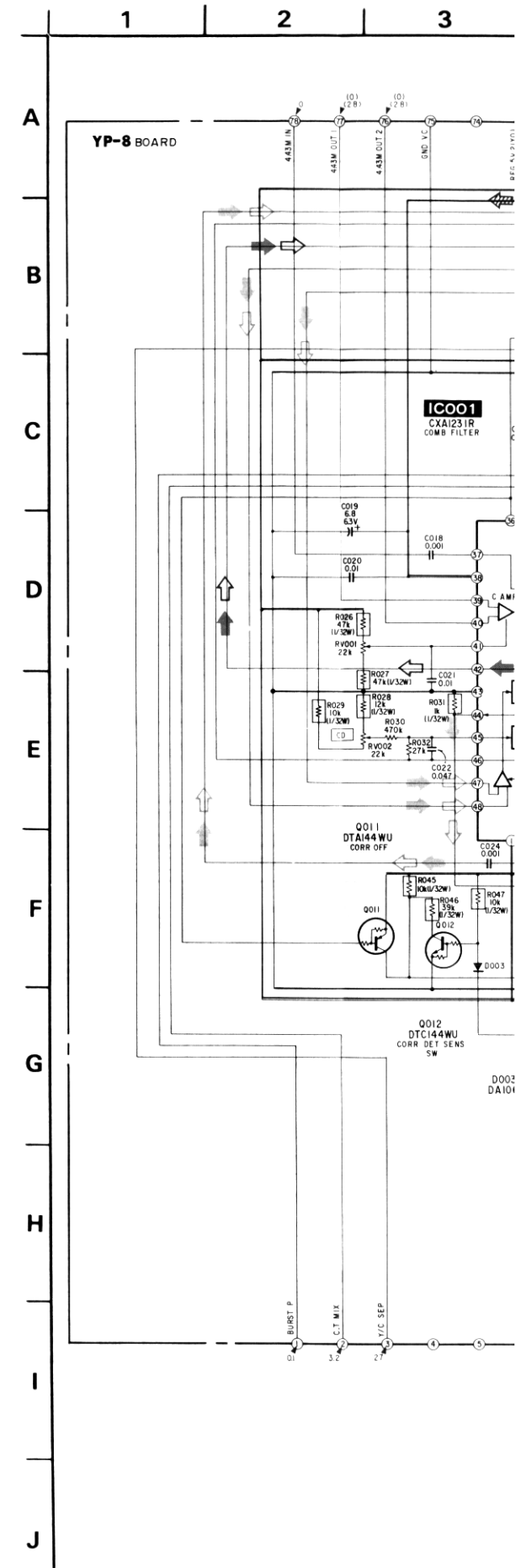
Note
Soldering side : Parts on the soldering side being (SIDE A) seen from the soldering are stated.
Component side : Parts on the component side being (SIDE B) seen from the component are stated.



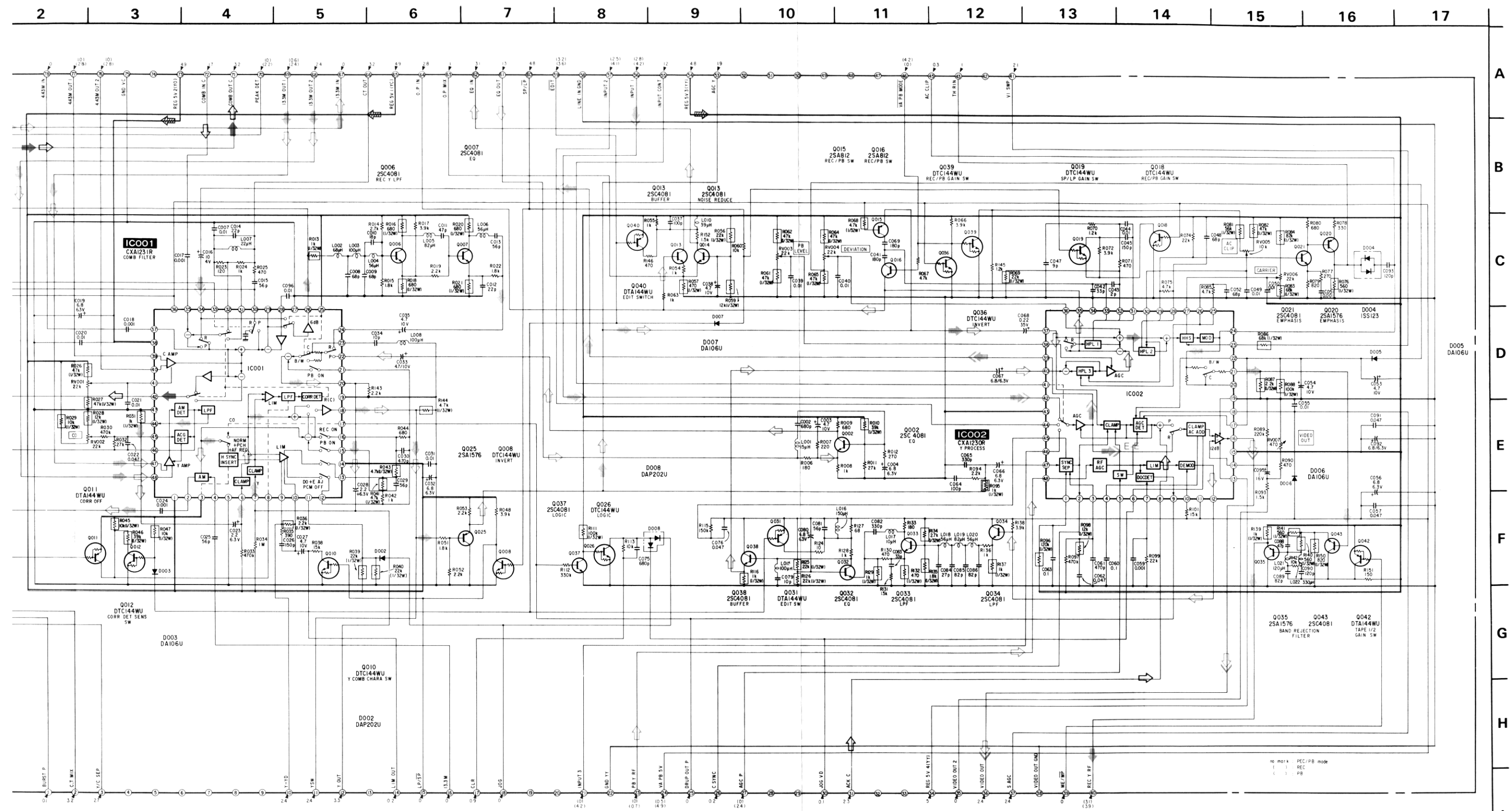
YP-8
(Y Process, Comb Filter)

- Note:
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
 - All resistors are in ohms, $\frac{1}{8}$ W unless otherwise noted.
k Ω : 1000 Ω , M Ω : 1000k Ω .
 - All capacitors are in μ F unless otherwise noted. pF : μ F.
50V or less are not indicated except for electrolytics, and tantalums.
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - ▨ : printed resistor.
 - : panel designation.
 - ▨ : fusible resistor.
 - △ : internal component.
 - ▨ : nonflammable resistor.
 - : B + bus.
 - ⇒ : IN/OUT direction of B+, B- bus.
 - : adjustment for repair.
 - Voltages are dc with respect to ground unless otherwise noted.
 - Readings are taken with a color-bar signal input.
(Remove the W331 on VA-36 board.
Input point: Pin ① of W331 on VA-36 board.
(75 Ω terminated)
 - Readings are taken with a digital multimeter (DC10M Ω).
 - Voltage variations may be noted due to normal production tolerances.

YP-8(Y PROCESS, COMB FILTER) SCHEMATIC DI.



COMB FILTER) SCHEMATIC DIAGRAM



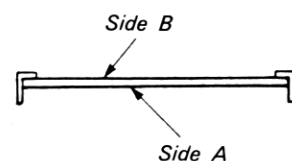
- Signal path
- REC Y Signal
- PB Y Signal
- REC CHROMA Signal
- PB CHROMA Signal
- REC Y/CHROMA Signal
- PB Y/CHROMA Signal

AU-32P(AUDIO PROCESS) PRINTED WIRING BOARD

AU-32P(AUDIO PROCESS) SCHEMATIC DIAGRAM

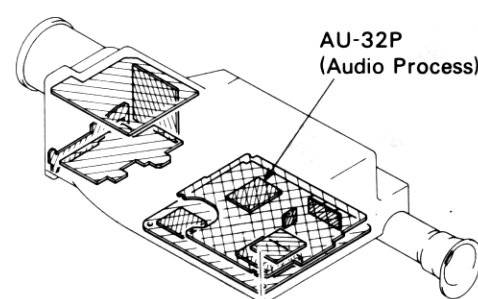
Note:

- ⊗ : Through hole.
- ■ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.
- ▨ : Printed resistor.



Note

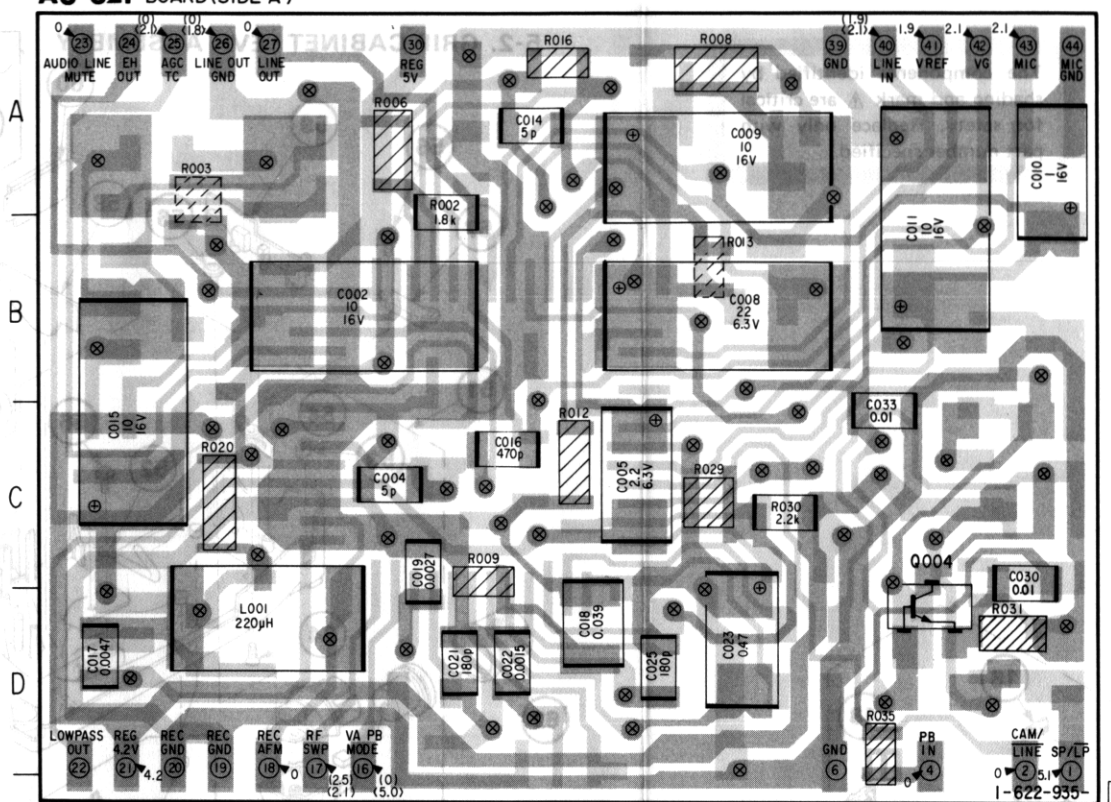
Soldering side : Parts on the soldering side being (SIDE A) seen from the soldering are stated.
Component side : Parts on the component side being (SIDE B) seen from the component are stated.



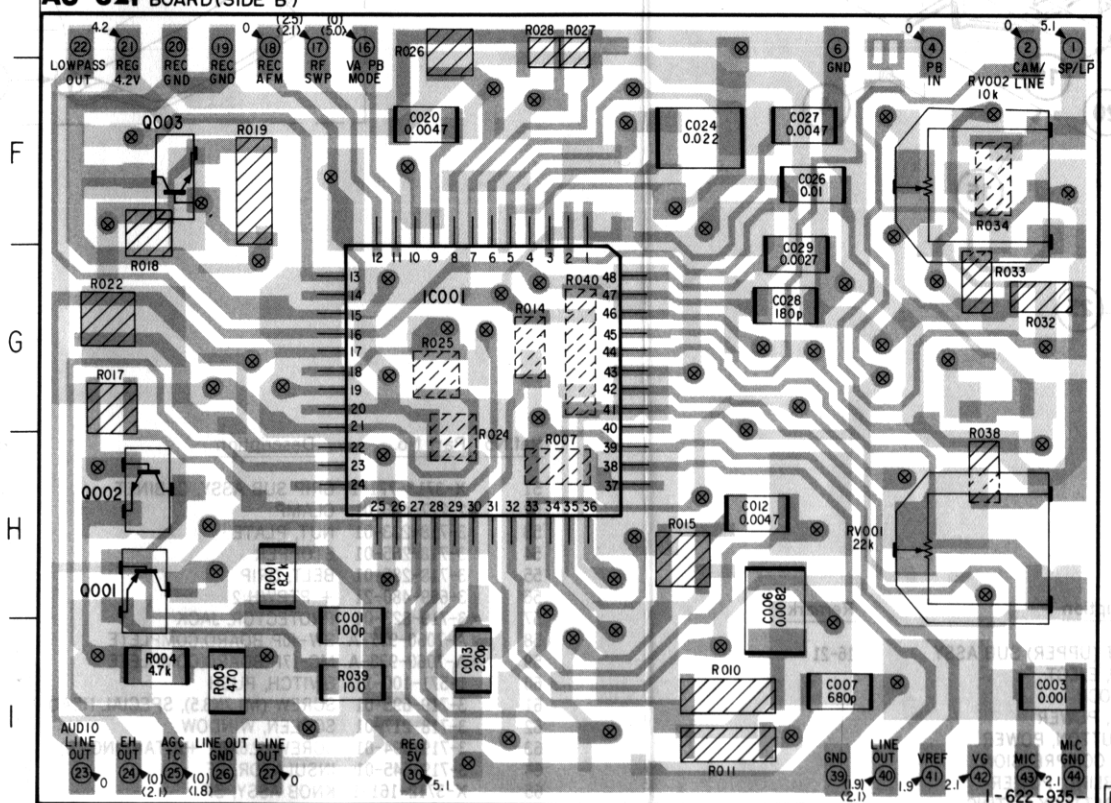
Note:

- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
 - All resistors are in ohms, 1/6W unless otherwise noted.
kΩ: 1000Ω, MΩ: 1000kΩ.
 - All capacitors are in μF unless otherwise noted. pF: μμF.
50V or less are not indicated except for electrolytics, and tantalums.
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - ▨ : printed resistor.
 - □ : panel designation.
 - ▨ : fusible resistor.
 - △ : internal component.
 - ▨ : nonflammable resistor.
 - — : B + bus.
 - → : IN/OUT direction of B+, B- bus.
 - □ : adjustment for repair.
 - Voltages are dc with respect to ground unless otherwise noted.
 - Readings are taken with a color-bar signal input.
- (Remove the W331 on VA-36 board.
Input point: Pin ① of W331 on VA-36 board.
(75Ω terminated)
- Readings are taken with a digital multimeter (DC10MΩ).
 - Voltage variations may be noted due to normal production tolerances.

AU-32P BOARD (SIDE A)



AU-32P BOARD (SIDE B)



A

B

C

D

E

F

G

H

I

J

1

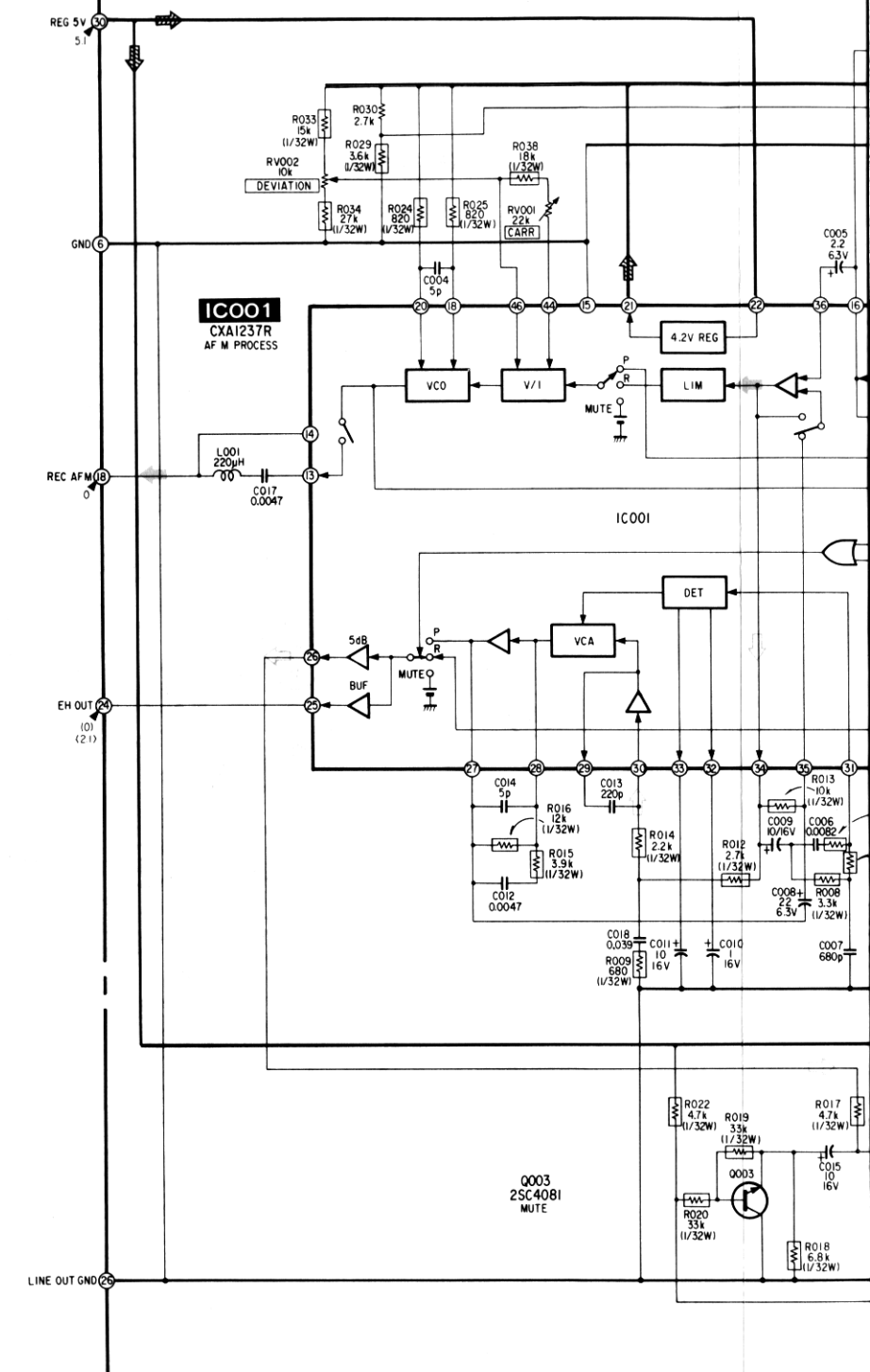
2

3

4

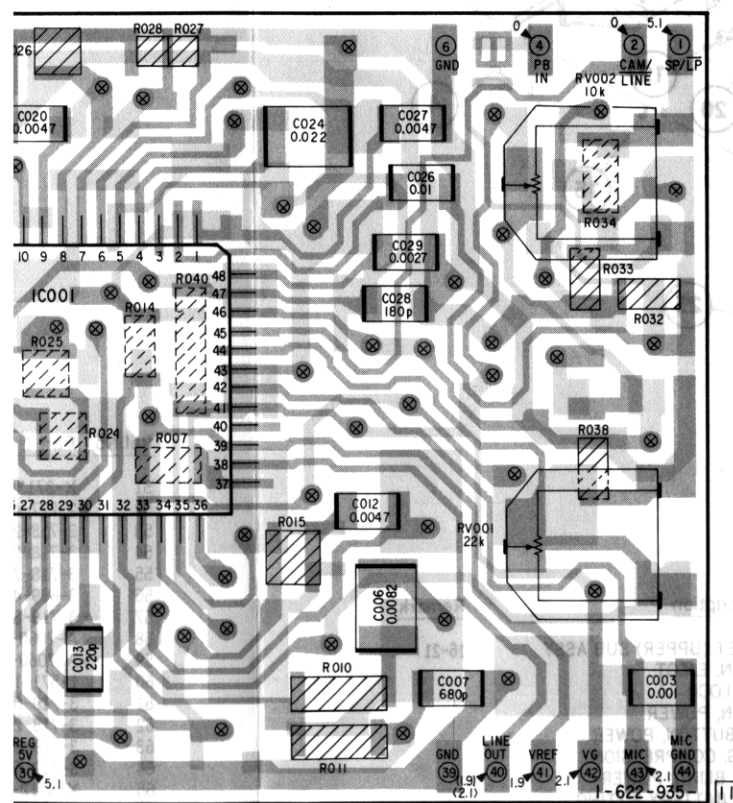
5

AU-32P BOARD



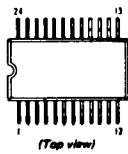
• Signal path

- REC AUDIO Signal
- PB AUDIO Signal

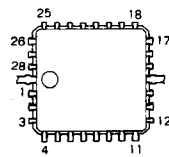


4-3. SEMICONDUCTORS

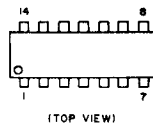
AN2510S
CX20114



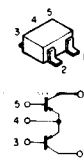
MC146805F2FPSC82533F



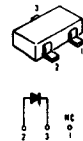
μ PD4066BG



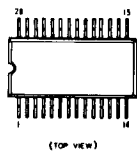
FMS1



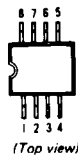
RD12M-B2
RD2.4M-B
RD5.6M-B2
RD9.1M-B1



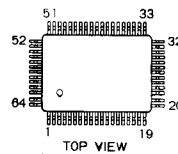
CXA1042M
CXD1030M
CX1042M



NJM4560M
TL062CPS
 μ PC358G2
 μ PC393G2



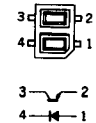
μ PD7503G-714-12



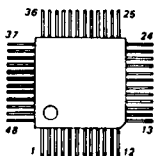
2SA1175



TLP907-0



CXA1070Q
CXA1072Q



TA7060AP



DTA124EU
DTA143EK
DTA143EU
DTA144EK
DTA144WK
DTA144WU
DTC144EK
DTC144TK
DTC144WU
2SA1163
2SA1602
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2SC1623
2SC1623-L7
2SC2757
2SC2757-T33
2SC4154

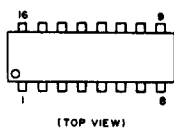
2SA1385



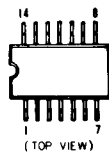
1SS123



CXD1141M
 μ PD4538BG



TC40H008F



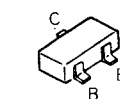
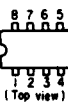
2SK300
2SK94
2SK94-X2



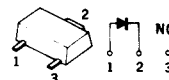
1SS187



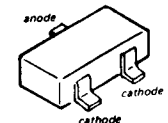
TL062ACPS
 μ PC4572G2



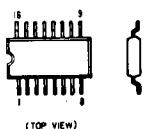
E10DS2
E10QS04



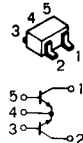
1S2835



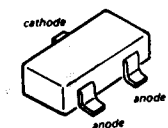
CX20115A
TA7733F



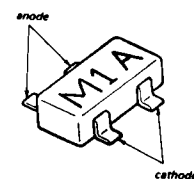
FMA2
FMG2
FMW1



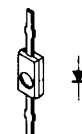
1S2837



MA159



1T32-2



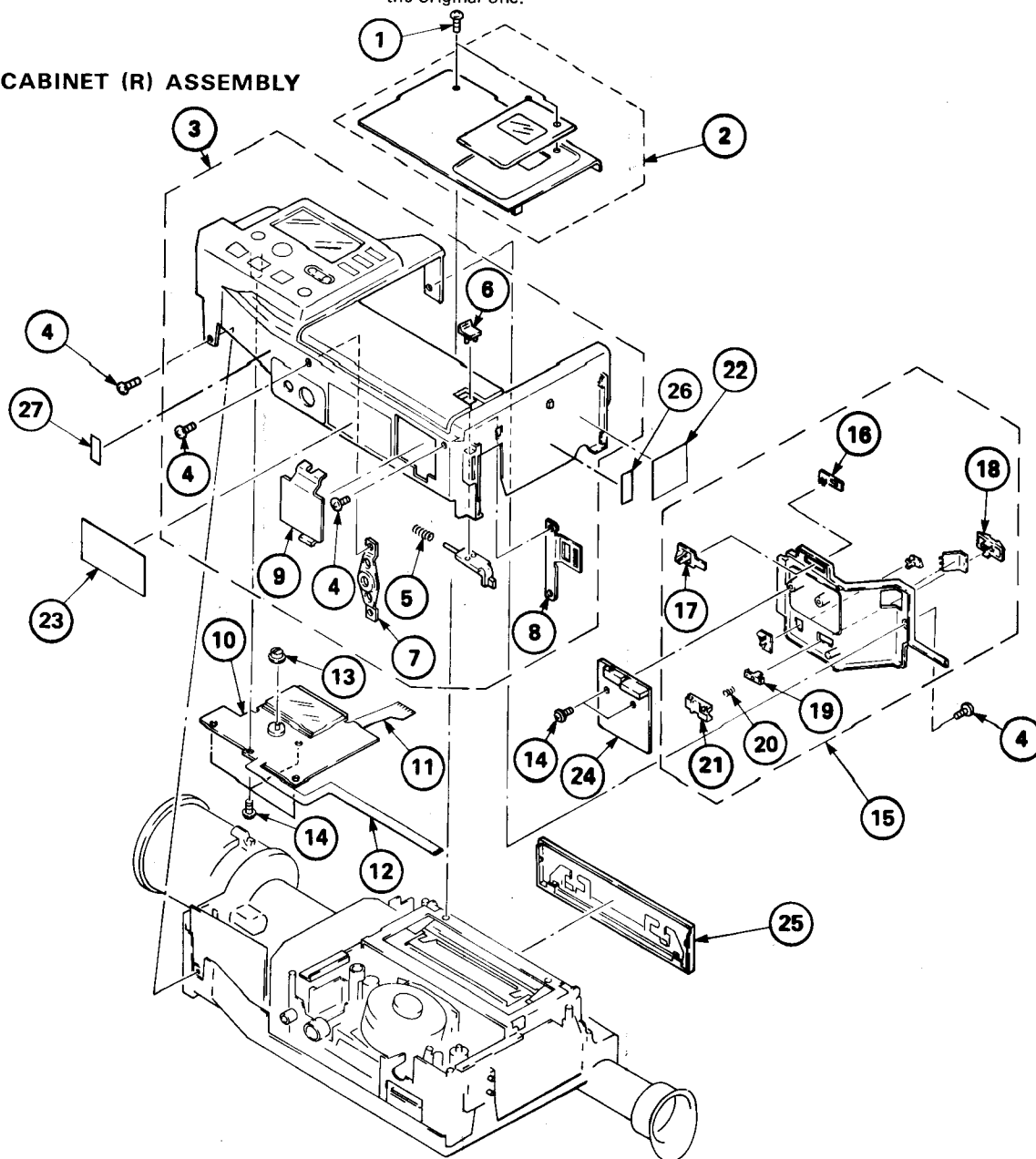
SECTION 5 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.

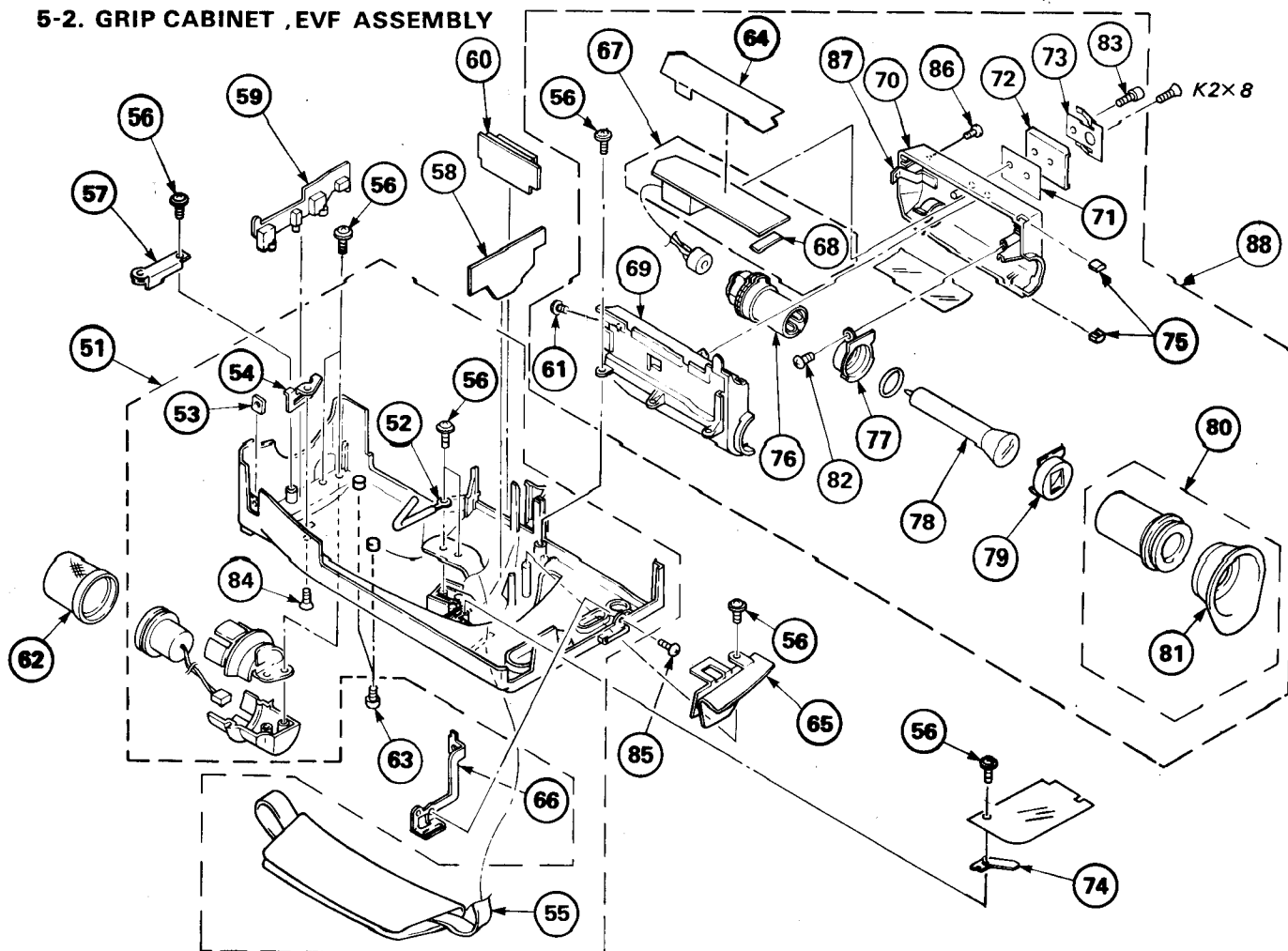
The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

5-1. CABINET (R) ASSEMBLY



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
1	3-713-791-01	SCREW (M1.7X5), TAPPING, P2		15	X-3713-768-1	CABINET (UPPER) SUB ASSY	16-21
2	X-3713-770-1	LID ASSY, CASSETTE		16	3-719-826-01	BUTTON, EJECT	
3	X-3713-769-1	CABINET (R) SUB ASSY	4-9	17	3-719-827-01	EJECT LOCK	
4	3-719-381-11	SCREW (M2X5)		18	3-718-226-01	BUTTON, POWER	
5	3-426-508-00	SPRING, COMPRESSION		19	3-718-257-01	PUSH BUTTON, POWER	
6	3-716-458-01	KNOB, BATTERY RELEASE		20	3-303-973-00	SPRING, COMPRESSION	
7	3-718-231-01	SCREW, TRIPOD		21	3-718-227-01	PLATE, BLIND, POWER	
8	3-718-254-01	HOOK (A), STRAP		22	*3-719-683-01	LABEL, BATTERY FITTING	
9	*3-718-273-01	LID, BATTERY CASE		23	*3-719-678-01	LABEL, MODEL NUMBER (AEP, AUS)	
10	*A-7060-930-A	FD-4P BOARD, COMPLETE			*3-721-707-01	(UK, E)	
11	1-622-947-11	FP-63 FLEXIBLE BOARD		24	*1-622-927-21	FK-4P BOARD	
12	1-622-941-11	FP-75 FLEXIBLE BOARD		25	X-3712-199-1	LID ASSY, LS	
13	3-719-825-01	KNOB, IRIS		26	*3-704-235-01	LABEL, CAUTION(UK)	
14	3-669-480-21	+ PTPWH 2		27	*2-359-729-02	LABEL, BEAB(UK)	

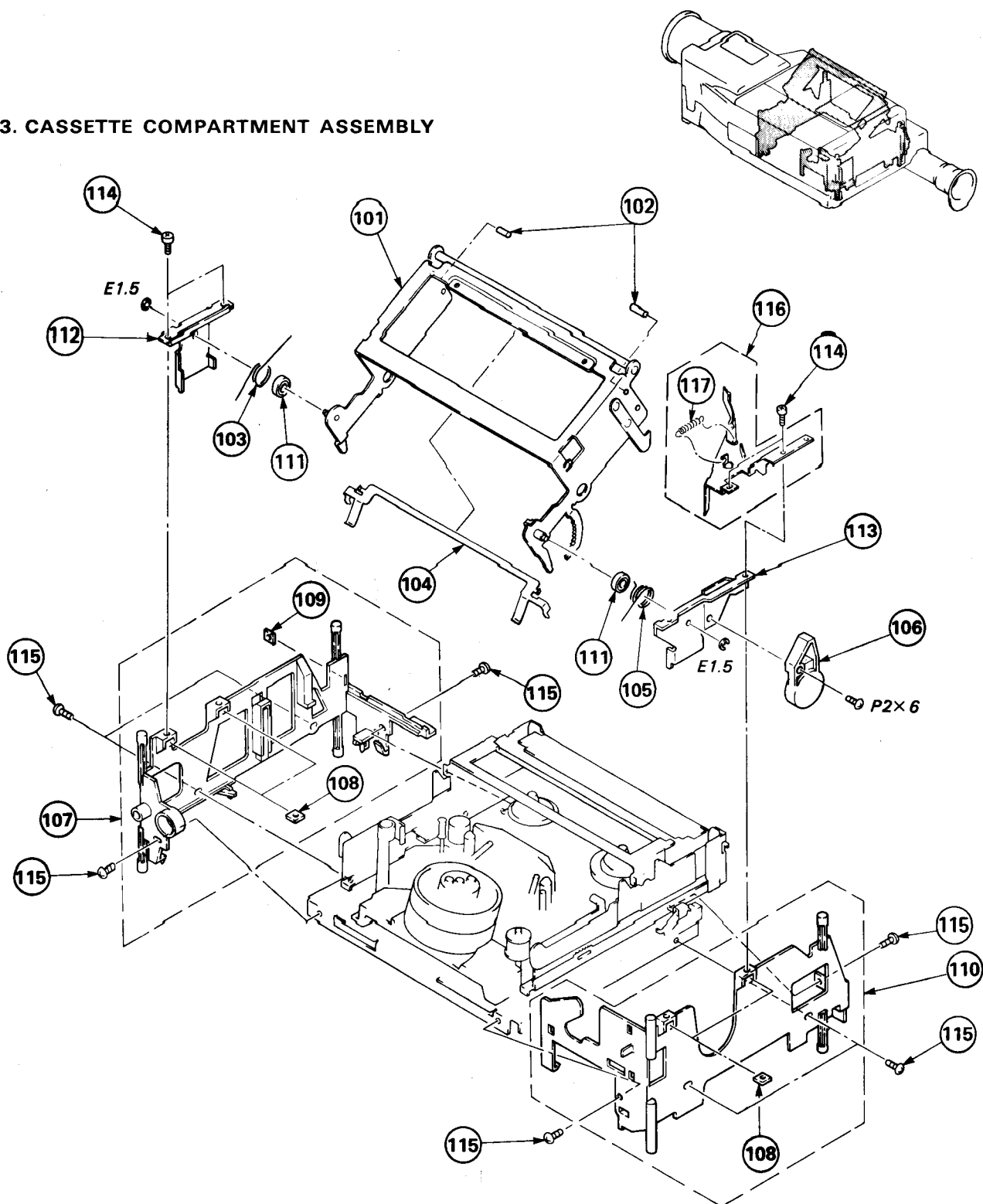
5-2. GRIP CABINET ,EVF ASSEMBLY



The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

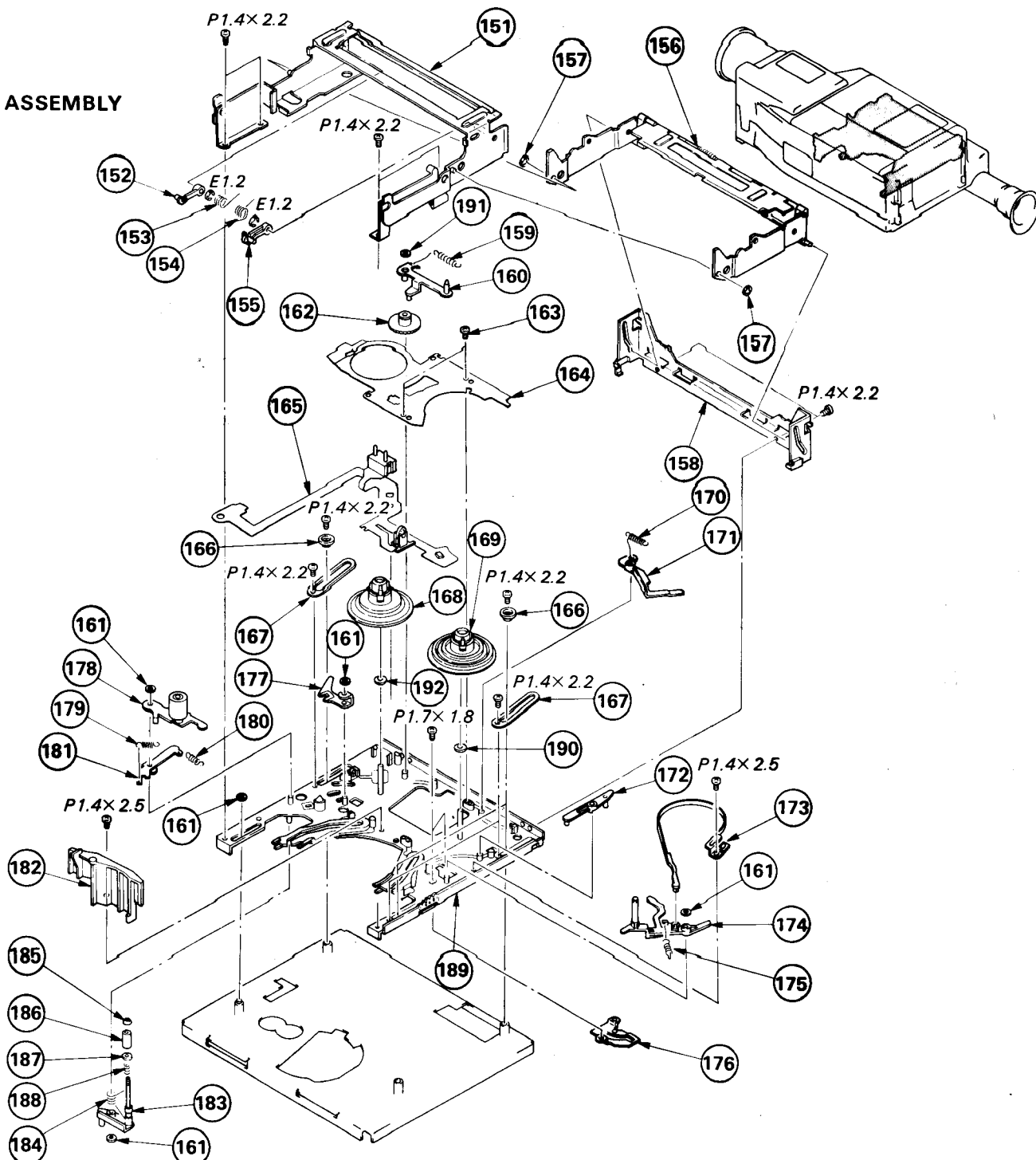
Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
51	X-3713-771-1	GRIP SUB ASSY, CABINET	52-56,84	70	3-719-640-01	CABINET, VF	
52	*2-277-426-01	CLAMP		71	*3-719-672-01	INSULATOR, ACC	
53	3-718-233-01	NUT, PLATE		72	3-688-985-01	SHOE, ACCESSORY	
54	3-718-265-01	STOPPER		73	3-688-940-01	SPRING, LEAF	
55	3-718-286-01	BELT, GRIP		74	*3-719-849-01	PROTECTOR, SW	
56	3-669-480-21	+ PTPWH 2		75	3-719-629-01	CLIP	
57	*3-719-823-01	PROTECTOR, JACK		76	▲1-451-310-11	DEFLECTION YOKE (B/W)(L901)	
58	*A-7060-937-A	SW-40P BOARD, COMPLETE		77	3-718-267-01	HOLDER (B), CRT	
59	*A-7060-938-A	MC-17P BOARD, COMPLETE		78	▲1-546-065-21	CATHODE-RAY TUBE, B/W(V901)	
60	1-571-100-11	SWITCH, PUSH		79	X-3712-159-1	HOLDER ASSY, CRT	
61	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD		80	X-3712-145-1	CAP ASSY, EYE	81
62	3-718-217-01	SCREEN, WINDOW		81	3-713-548-01	CUP, EYE	
63	3-719-694-01	SCREW (2.6X8), +B TAPPING (B)		82	3-719-843-01	SCREW (B2.6X8) (G), TAPPING	
64	3-719-645-01	INSULATOR, VF		83	3-678-103-31	SCREW, EVF STOPPER	
65	X-3712-161-1	KNOB ASSY, SP		84	3-719-831-01	SCREW (M2X6)	
66	3-718-283-01	HOOK (B), STRAP		85	3-719-381-11	SCREW (M2X5)	
67	*A-7085-010-A	VF-9P BOARD, COMPLETE	68	86	3-713-790-01	SCREW (M2X6), TAPPING, P3	
68	*1-622-923-22	LD-8P BOARD		87	3-719-693-01	SUPPORT, VF	
69	3-719-803-01	CASE, VF		88	A-7019-068-A	EVF ASSY	56,61,64,67, 69,70-73,75-83,86,87

5-3. CASSETTE COMPARTMENT ASSEMBLY



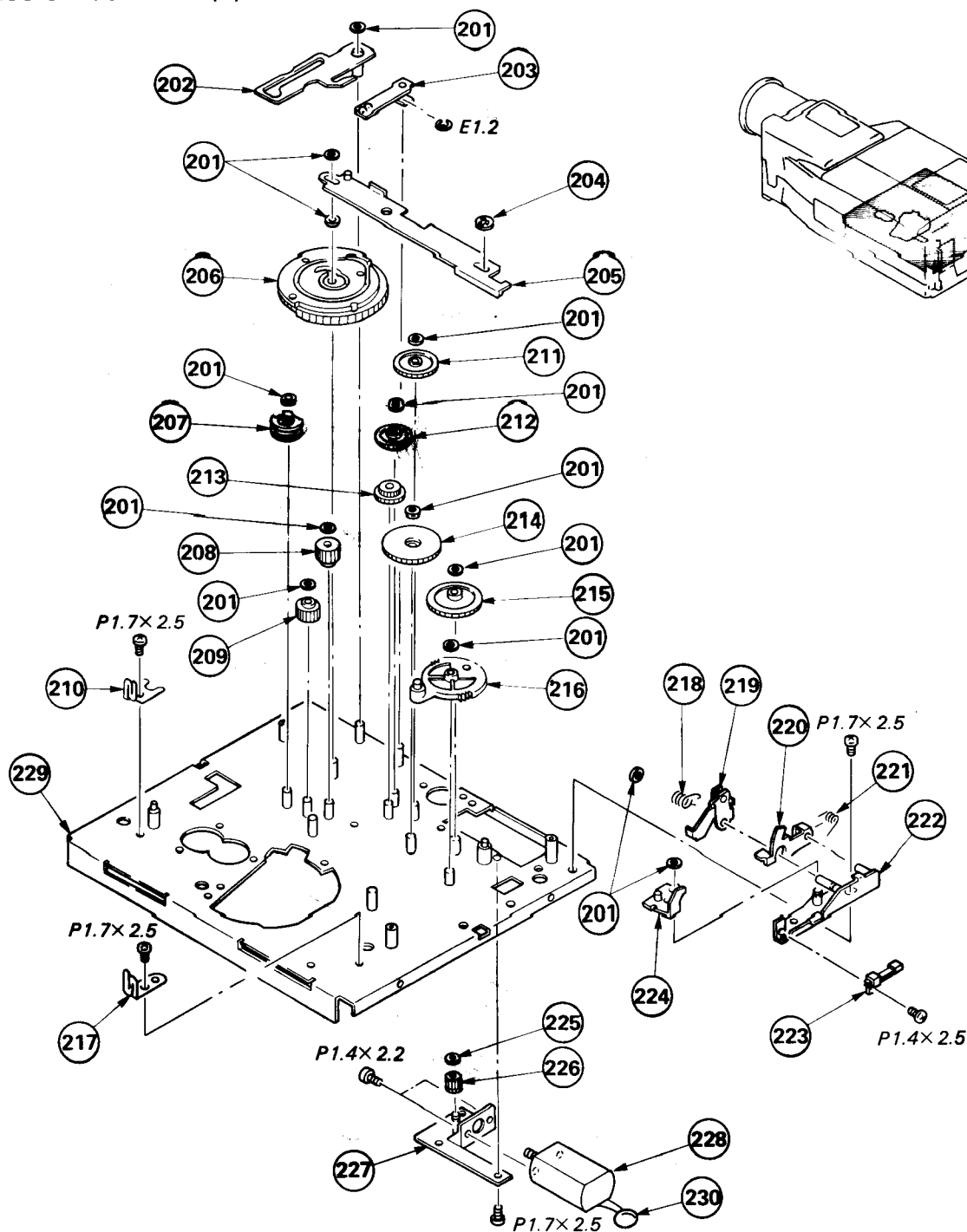
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
101	X-3712-034-1	ARM ASSY (2), CASSETTE	102, 104	109	3-718-233-01	NUT, PLATE	
102	3-695-602-01	SHAFT, RIVETING, CASSETTE ARM		110	X-3712-144-1	FRAME (REAR) ASSY	108
103	3-695-582-01	SPRING, TORSION		111	3-695-512-02	COLLAR, CASSETTE ARM	
104	3-695-580-01	RETAINER, CASSETTE COMPARTMENT		112	*3-719-606-01	PLATE (T2) (M), SIDE	
105	3-695-581-01	SPRING, TORSION		113	*3-719-607-01	PLATE (S2) (M), SIDE	
106	3-719-604-01	DAMPER, OIL		114	3-719-697-01	SCREW (M1.7X5), SPECIAL HEAD	
107	X-3712-143-1	FRAME (FRONT) ASSY	108, 109	115	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD	
108	3-716-418-01	NUT, FRAME PLATE		116	X-3713-916-1	GUARD ASSY, TAPE	117
				117	3-695-718-01	SPRING, TENSION	

5-4. LS ASSEMBLY



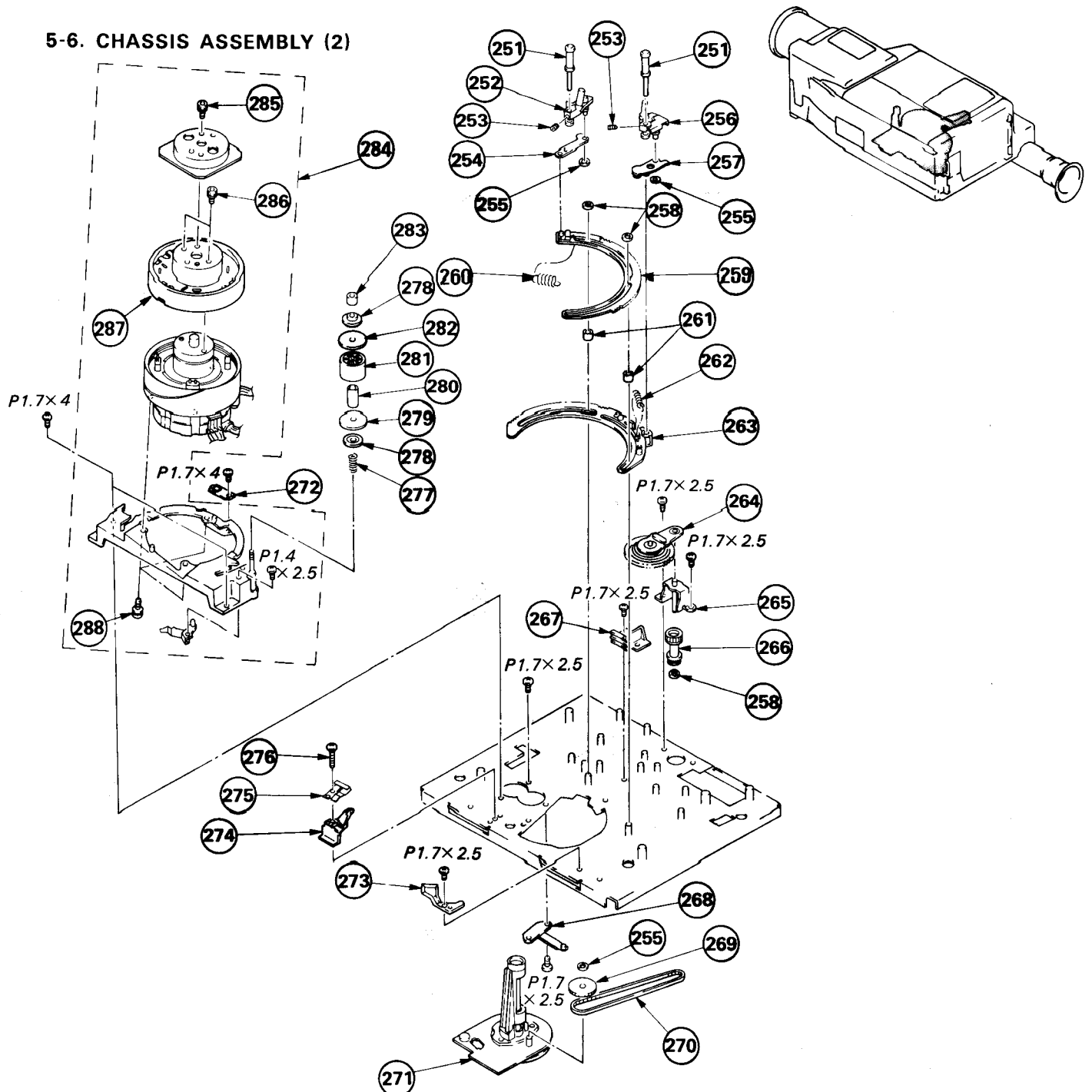
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	X-3695-447-4	COMPARTMENT ASSY, CASSETTE, LS		172	3-695-735-01	ARM, TG1 RELEASE	
152	3-695-595-01	RETAINER (T), CASSETTE		173	X-3695-432-1	BAND ASSY, TG1	
153	3-695-605-01	SPRING, TORSION		174	X-3712-019-1	ARM ASSY (2), TG1	
154	3-695-604-01	SPRING, TORSION		175	3-695-591-01	SPRING, TENSION	
155	3-695-594-01	RETAINER (S), CASSETTE		176	3-695-733-01	PLATE, CAM, LS	
156	X-3695-448-3	ARM ASSY, BLIND		177	X-3712-022-1	ARM (B) ASSY (2), PINCH	
157	3-669-465-00	WASHER (1.5), STOPPER		178	X-3712-032-2	ARM (C) ASSY (2), PINCH	
158	3-695-646-01	ARM, LS		179	3-695-622-01	SPRING, TENSION	
159	3-695-718-01	SPRING, TENSION		180	3-695-719-01	SPRING, TENSION	
160	X-3712-037-1	LEVER (A) ASSY (2)		181	X-3695-415-1	PINCH LEVER ASSY	
161	3-315-384-31	WASHER, STOPPER		182	3-695-624-01	BASE, PROTECT	
162	X-3712-025-1	GEAR ASSY, TS		183	X-3712-027-1	ARM ASSY (2), TG7	
163	3-699-402-01	SCREW (M1.3X5.5), TAPPING		184	3-695-541-01	SPRING	
164	3-712-165-01	PLATE (2), STOPPER		185	3-712-158-01	FLANGE, UPPER, TG7	
165	A-7060-693-A	FP-53 BOARD, COMPLETE		186	3-712-160-01	SLEEVE (2), TG7	
166	3-695-698-01	GUIDE, LS		187	3-712-159-01	FLANGE, LOWER, TG7	
167	3-695-697-01	SPRING, LEAF, LS		188	3-712-157-01	SPRING, COMPRESSION	
168	X-3695-436-1	TABLE ASSY, REEL, TAKE-UP		189	X-3712-035-1	CHASSIS ASSY (2), LS	
169	X-3712-038-1	TABLE ASSY (2), REEL, SUPPLY		190	3-701-444-01	WASHER, 6	
170	3-542-475-00	SPRING, TENSION		191	3-321-393-01	WASHER, STOPPER	
171	3-712-151-01	BRAKE (2), SOFT		192	3-701-441-01	WASHER	

5-5. CHASSIS ASSEMBLY (1)



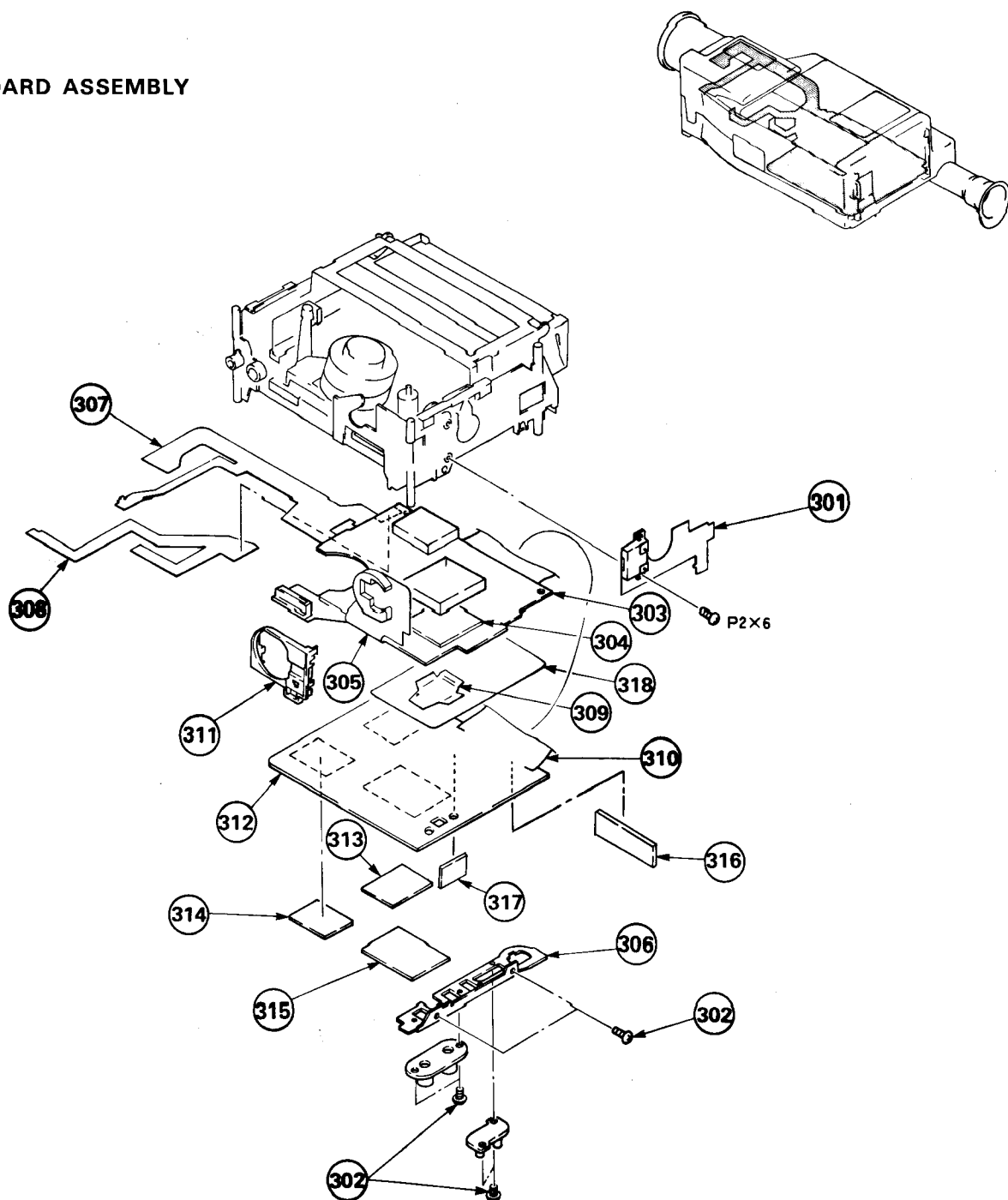
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
201	3-315-384-31	WASHER, STOPPER		216	X-3695-417-1	GEAR (C) ASSY, LS	
202	X-3712-023-1	ARM (A) ASSY (2), PINCH		217	*3-695-705-01	SPRING (S)	
203	3-695-589-01	LEVER (B), REEL LOCK		218	3-713-937-01	SPRING (A) (2)	
204	3-669-465-00	WASHER (1.5), STOPPER		219	X-3695-418-1	ARM ASSY, LOCK	
205	X-3695-439-1	SLIDER ASSY, M		220	3-695-574-01	ARM, RETURN PREVENTION	
206	X-3712-031-1	CAM ASSY (2)		221	3-695-579-01	SPRING (B), TORSION	
207	3-712-156-01	GEAR (M) (2), THREADING		222	X-3712-018-1	BASE ASSY (2), LOCK	
208	3-695-537-01	GEAR (T), THREADING		223	1-553-226-00	SWITCH, LEAF (S902)	
209	3-695-536-01	GEAR (S), THREADING		224	X-3695-438-1	ARM ASSY, EJECT	
210	*3-695-706-01	SPRING (T)		225	3-321-393-01	WASHER, STOPPER	
211	3-695-559-01	GEAR (B), THREADING		226	3-712-150-01	WHEEL, WORM	
212	3-695-724-01	GEAR (D), THREADING		227	X-3712-017-1	HOLDER ASSY, MOTOR	
213	3-712-162-02	GEAR (C) (2), THREADING		228	1-541-508-11	MOTOR, DC (LA14-323F) (LOADING) (M903)	
214	3-695-714-01	GEAR (A), LS		229	X-3712-036-1	CHASSIS ASSY (2), MECHANICAL	
215	3-695-563-04	GEAR (B), LS		230	1-161-051-00	CAP, CERAMIC 0.01MF X	

5-6. CHASSIS ASSEMBLY (2)



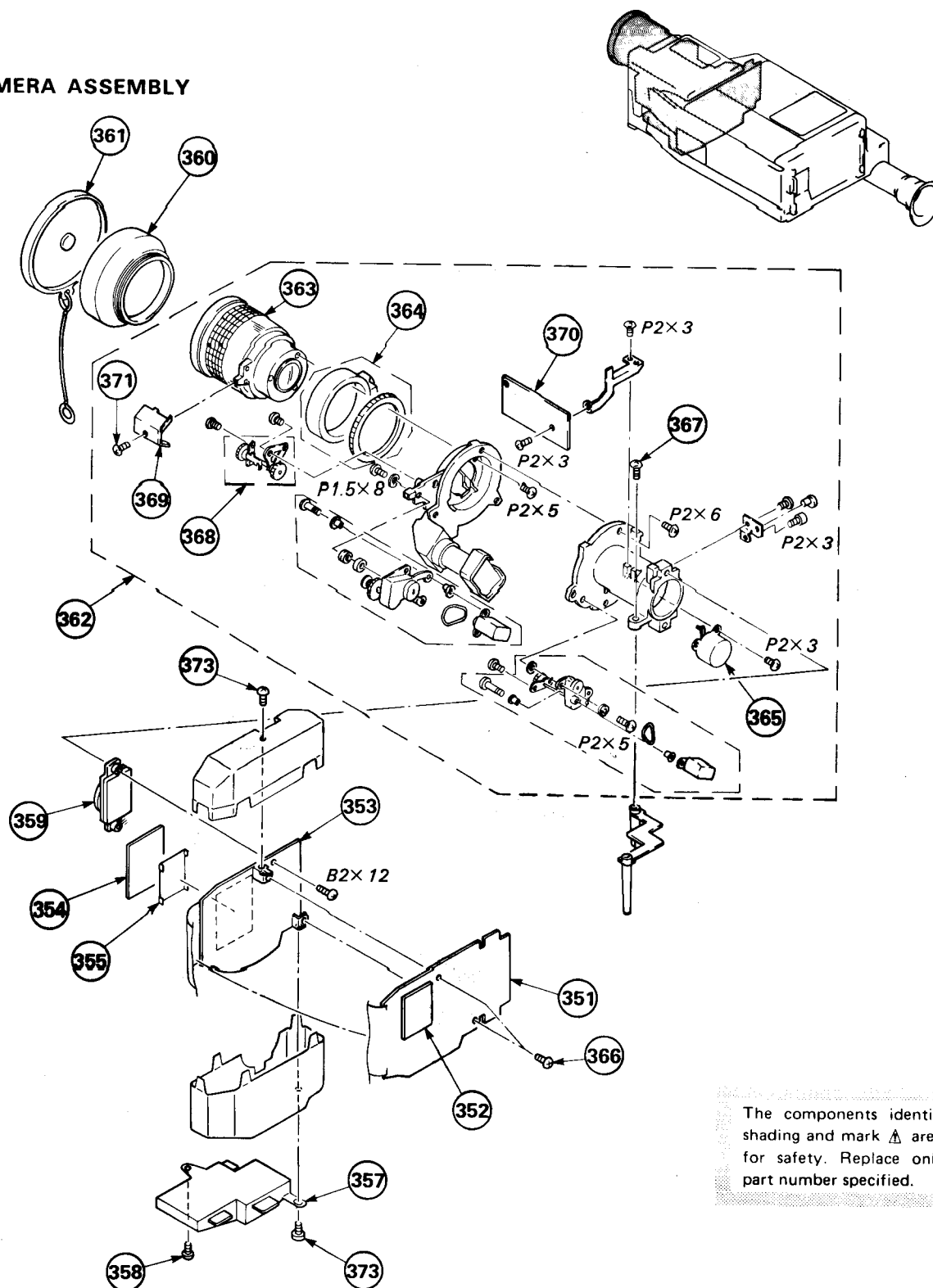
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
251	X-3712-029-1	ROLLER ASSY (2), GUIDE		270	3-695-637-01	BELT, RELAY	
252	X-3712-030-1	BASE ASSY (2), TG5		271	8-835-223-01	MOTOR, DC BHF-3301B (CAPSTAN) (M902)	
253	3-695-770-01	SCREW, GR LOCK		272	1-807-238-11	SENSOR, DEW CONDENSATION	
254	3-695-545-01	JOINT, T		273	3-695-627-01	STOPPER, SLIDER, S	
255	3-321-393-01	WASHER, STOPPER		274	3-695-628-01	STOPPER, SLIDER, T	
256	X-3712-028-1	BASE ASSY (2), TG4		275	3-695-677-01	SPRING (T), LEAF	
257	X-3695-429-1	JOINT ASSY, S		276	3-695-519-01	SCREW, FITTING, LEAF SPRING(T)	
258	3-315-384-31	WASHER, STOPPER		277	3-695-532-01	SPRING, COMPRESSION	
259	X-3695-414-1	SLIDER (T) ASSY, THREADING		278	3-695-727-01	RETAINER, FLANGE, UPPER	
260	3-695-773-01	SPRING, TENSION		279	3-695-794-01	FLANGE, LOWER, TG2	
261	3-695-544-01	ROLLER, GUIDE		280	3-695-530-01	SLEEVE, TG2	
262	3-695-772-01	SPRING, TENSION		281	3-712-164-01	ROLLER (2), TG2	
263	X-3695-428-1	SLIDER (S) ASSY, THREADING		282	3-695-528-01	FLANGE, TG2	
264	X-3712-024-1	ARM ASSY (2), GEAR		283	3-695-529-01	NUT, TG2	
265	X-3712-020-1	BASE ASSY (2), MIDWAY PULLEY		284	A-7048-124-A	DRUM ASSY (DGR-27A-R)	285-288
266	X-3712-021-1	PULLEY ASSY (2), MIDWAY		285	3-686-422-01	WASHER (2X2.7), BOLT, HOLE	
267	3-712-163-01	SUPPORT (2), SLIDER		286	3-686-403-01	SCREW (2X5), BOLT WASHER	
268	1-535-574-11	TERMINAL, SHAFT GROUND		287	A-7049-143-A	DRUM ASSY, UPPER (DGR-27-R)	
269	X-3695-413-1	GEAR ASSY, CHANGE		288	3-686-444-02	SCREW +P 2X5.5	

5-7. MAIN BOARD ASSEMBLY



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
301	1-622-938-23	FP-70P FLEXIBLE BOARD		310	1-622-946-11	FP-60 FLEXIBLE BOARD	
302	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD		311	3-718-274-11	COVER	
303	*A-7060-920-A	SS-81 BOARD, COMPLETE	304,305	312	*A-7060-919-A	VA-36 BOARD, COMPLETE	313-315
304	A-7068-081-A	RP-47P BOARD, COMPLETE(HIC)		313	A-7068-091-A	AU-32P BOARD, COMPLETE(HIC)	
305	1-622-943-11	FP-57 FLEXIBLE BOARD		314	A-7068-092-A	CC-10 BOARD, COMPLETE(HIC)	
306	*X-3712-198-1	HOLDER ASSY, VO		315	A-7068-093-A	YP-8 BOARD, COMPLETE(HIC)	
307	1-622-945-11	FP-59 FLEXIBLE BOARD		316	*A-7060-922-A	AT-6 BOARD, COMPLETE	
308	1-622-939-11	FP-71 FLEXIBLE BOARD		317	*A-7060-923-A	NR-1 BOARD, COMPLETE	
309	1-622-940-11	FP-72 FLEXIBLE BOARD					

5-8. CAMERA ASSEMBLY



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
351	*A-7060-926-A	VC-24P BOARD,COMPLETE	352	362	1-547-242-11	LENS, ZOOM (VCL-1206YH)	363-365,367-371
352	A-7068-094-A	CP-19P BOARD,COMPLETE(HIC)		363	3-707-368-01	RUBBER, FOCUS	
353	*A-7060-925-A	VC-23P BOARD,COMPLETE	354,356	364	3-707-371-01	RING ASSY, ZOOM	
354	A-7068-082-A	DT-62P BOARD,COMPLETE(HIC)		365	3-707-369-01	METER ASSY, EE	
355	*X-3712-160-1	PLATE ASSY, SHIELD, VC		366	3-719-696-02	SCREW(M2x3),SPECIAL HEAD	
356	1-622-942-11	FP-54 FLEXIBLE BOARD		367	3-719-843-01	SCREW (B2.6X8) (G), TAPPING	
357	A-464-815-11	CONVERTER UNIT, DC-DC		368	3-707-370-01	GEAR ASSY, AF DRIVE	
358	3-719-601-01	SCREW (B2x5), TAPPING		369	3-719-687-01	COVER, GEAR	
359	8-750-010-65	IU024AK-10A CCD IMAGER		370	*A-7060-961-A	AF-32 BOARD,COMPLETE	
360	3-718-235-01	HOOD, LENS		371	3-719-845-01	SCREW(B2x4),TAPPING	
361	3-719-348-01	CAP, HOOD					

5-9. HARDWARE LIST

7-627-852-27 +P 1.7X3

SCREW

7-621-255-45 SCREW +P
7-621-772-60 SCREW +B
7-627-850-17 SCREW,PRECISION +P 1.4X2.5
7-627-552-07 SCREW,PRECISION +P 1.7X2.5
7-627-852-18 SCREW,PRECISION +P 1.7X4 TYPE3
7-627-852-38 SCREW,PRECISION +P1.7X1.8TYPE3
7-685-205-19 SCREW +KTP 2X8 TYPE2 NON-SLIT

STOP RING

7-624-101-01 STOP RING 1.2 (E TYPE)
7-624-102-04 STOP RING 1.5, TYPE -E

SECTION 6 ELECTRICAL PARTS LIST

FP-57

NR-1

AT-6

NOTE:

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX, -X, mean standardized parts, so they may have some difference from the original one.
- SEMICONDUCTORS
In each case, U: μ , for example:
UA. . . : μ A. . . , UPA. . . : μ PA. . . ,
UPB. . . : μ PB. . . , UPC. . . : μ PC. . . ,
UPD. . . : μ PD. . .
- CAPACITORS
MF: μ F, PF: μ F
- COILS
MMH: mH, UH: μ H

Ref.No	Part No.	Description	Remark
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*1-622-943-11	FP-57 FLEXIBLE BOARD		

*1-550-104-32	HOLDER, BATTERY		
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CONNECTOR

CN001	1-562-879-11	CONNECTOR, CARD EDGE 19P	
CN002	1-562-880-11	CONNECTOR, CARD EDGE 15P	

SWITCH

S953	1-570-870-11	SWITCH, SLIDE	
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*A-7060-923-A	NR-1 BOARD, COMPLETE		

CAPACITOR

C101	1-163-120-00	CERAMIC CHIP	130PF	5%	50V
C102	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C103	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C104	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C105	1-124-225-00	ELECT	100MF	20%	6.3V
C106	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C107	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C108	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C109	1-163-035-00	CERAMIC CHIP	0.047MF		50V

DIODE

D101	8-719-101-23	DIODE 1SS123	
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IC

IC101	8-759-200-60	IC TA7060AP	
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TRANSISTOR

Q101	8-729-100-67	TRANSISTOR 2SC1623	
Q102	8-729-100-67	TRANSISTOR 2SC1623	
Q103	8-729-900-99	TRANSISTOR DTA144WK	

RESISTOR

R101	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R102	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R103	1-216-041-00	METAL GLAZE	470	5%	1/10W
R104	1-216-037-00	METAL GLAZE	330	5%	1/10W
R105	1-216-039-00	METAL GLAZE	390	5%	1/10W
R106	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R107	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R108	1-216-031-00	METAL GLAZE	180	5%	1/10W
R109	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R110	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W

Ref.No	Part No.	Description	Remark
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R111	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R112	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R114	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W

*A-7060-922-A	AT-6 BOARD, COMPLETE		

CAPACITOR

C001	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V
C002	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V
C003	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C004	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C005	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V
C006	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C007	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C008	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C009	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C010	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V

C011	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C012	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C013	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C014	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C015	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

C016	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
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IC

IC001	8-759-928-56	IC CXA1042M	
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COIL

L001	1-410-389-11	INDUCTOR CHIP 47UH	
L002	1-410-656-21	INDUCTOR CHIP 150UH	

TRANSISTOR

Q001	8-729-100-76	TRANSISTOR 2SA812	
Q002	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

R001	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R002	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R003	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R004	1-216-035-00	METAL GLAZE	270	5%	1/10W
R005	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R006	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R007	1-216-047-00	METAL GLAZE	820	5%	1/10W
R008	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R009	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R010	1-216-115-00	METAL GLAZE	560K	5%	1/10W

R011	1-216-049-00	METAL GLAZE	1K	5%	1/10W
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Ref.No	Part No.	Description	Remark			
R012	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R013	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R014	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R015	1-216-103-00	METAL GLAZE	180K	5%	1/10W	

***A-7060-920-A** SS-81 BOARD, COMPLETE

A-7068-081-A RP-47P BOARD, COMPLETE

*1-622-939-11 FP-71 FLEXIBLE BOARD
*1-622-945-11 FP-59 FLEXIBLE BOARD
*1-622-946-11 FP-60 FLEXIBLE BOARD
*3-718-223-01 HOLDER, TE

CAPACITOR

C001	1-124-224-00	ELECT	47MF	20%	6.3V
C002	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C003	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C004	1-124-245-00	ELECT	4.7MF	20%	16V
C005	1-124-225-00	ELECT	100MF	20%	6.3V
C006	1-162-638-11	CERAMIC CHIP	1MF		16V
C007	1-162-638-11	CERAMIC CHIP	1MF		16V
C010	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C011	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C012	1-135-099-00	TANTAL CHIP	2.2MF	20%	6.3V
C013	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C014	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C015	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C016	1-124-462-00	ELECT	10MF	20%	6.3V
C017	1-124-462-00	ELECT	10MF	20%	6.3V
C018	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C019	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C020	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C021	1-136-017-00	CERAMIC CHIP	0.0047MF		50V
C022	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C023	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C024	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C025	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C026	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C027	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C028	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C029	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C031	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C201	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C202	1-124-577-11	ELECT	82MF	20%	10V
C203	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C204	1-124-577-11	ELECT	82MF	20%	10V
C205	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C206	1-124-577-11	ELECT	82MF	20%	10V
C207	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C208	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C211	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C212	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C213	1-124-462-00	ELECT	10MF	20%	16V
C214	1-124-462-00	ELECT	10MF	20%	16V
C215	1-127-506-00	ELECT(SOLID)	1MF	20%	25V
C216	1-162-638-11	CERAMIC CHIP	1MF		16V
C217	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C218	1-124-258-00	ELECT	3.3MF	20%	25V
C219	1-124-462-00	ELECT	10MF	20%	16V
C220	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C221	1-124-462-00	ELECT	10MF	20%	16V
C222	1-135-099-00	TANTAL CHIP	2.2MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark			
C223	1-135-091-00	TANTAL CHIP	1MF	20%	16V	
C224	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V	
C225	1-124-596-11	ELECT	27MF	20%	16V	
C226	1-124-596-11	ELECT	27MF	20%	16V	
C227	1-124-596-11	ELECT	27MF	20%	16V	

C228	1-124-236-00	ELECT	47MF	20%	16V
C301	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C302	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C303	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C304	1-163-038-00	CERAMIC CHIP	0.1MF		25V

C305	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C307	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C308	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C309	1-163-038-00	CERAMIC CHIP	0.1MF		25V

C310	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
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CONNECTOR

CN001	*1-564-014-00	PIN, CONNECTOR 4P			
CN002	*1-564-014-00	PIN, CONNECTOR 4P			
CN003	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P			
CN301	1-566-529-11	CONNECTOR, FPC (ZIF) 13P			
CN302	*1-566-540-11	CONNECTOR, FPC (NON ZIF) 8P			

DIODE

D001	8-719-100-05	DIODE IS2837			
D002	8-719-801-45	DIODE 1SS187			
D003	8-719-404-12	DIODE MA159			
D004	8-719-404-12	DIODE MA159			
D005	8-719-801-45	DIODE 1SS187			
D006	8-719-105-28	DIODE RD2.4M-B			
D007	8-719-100-03	DIODE 1S2835			
D009	8-719-801-45	DIODE 1SS187			
D208	8-719-200-36	DIODE E10QS04			
D209	8-719-200-36	DIODE E10QS04			
D223	8-719-200-27	DIODE E10DS2			

IC

IC001	8-759-140-32	IC UPD78112GF			
IC002	8-759-112-71	IC UPD7564G			
IC003	8-759-207-00	IC TA7733F			
IC004	8-759-100-94	IC UPC358G2			
IC005	8-759-940-79	IC S-81350AG			
IC220	8-759-202-45	IC CX20114			
IC221	8-759-107-68	IC CX20115A			
IC222	8-752-003-60	IC CX20036			

COIL

L001	1-410-381-11	INDUCTOR CHIP 10UH			
L205	1-410-627-11	COIL, CHOKE 100UH			
L206	1-421-983-11	COIL, CHOKE 700UH			
L207	1-421-983-11	COIL, CHOKE 700UH			
L211	1-410-389-11	INDUCTOR CHIP 47UH			
L301	1-408-777-00	INDUCTOR CHIP 10UH			
L302	1-408-793-21	INDUCTOR CHIP 220UH			

PHOTOSENSOR

PH001	8-729-905-07	PT480FI			
PH002	8-729-905-07	PT480FI			

TRANSISTOR

Q001	8-729-902-96	TRANSISTOR FMS1			
Q002	8-729-903-10	TRANSISTOR FMW1			
Q004	△ 8-729-105-29	TRANSISTOR 2SA1385			
Q005	8-729-602-21	TRANSISTOR 2SC4154			

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
Q006	△ 8-729-805-25	TRANSISTOR 2SB1121	
Q007	△ 8-729-805-25	TRANSISTOR 2SB1121	
Q009	8-729-901-06	TRANSISTOR DTA144EK	
Q010	8-729-805-25	TRANSISTOR 2SB1121	
Q011	8-729-805-25	TRANSISTOR 2SB1121	
Q012	8-729-904-07	TRANSISTOR FMG2	
Q013	8-729-902-96	TRANSISTOR FMS1	
Q014	8-729-901-47	TRANSISTOR DTA143EK	
Q015	8-729-903-10	TRANSISTOR FMW1	
Q016	8-729-903-10	TRANSISTOR FMW1	
Q017	8-729-602-36	TRANSISTOR 2SA1602	
Q018	8-729-905-57	TRANSISTOR DTA124EU	
Q019	8-729-901-06	TRANSISTOR DTA144EK	
Q020	△ 8-729-106-40	TRANSISTOR 2SB1114	
Q021	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q022	8-729-905-45	TRANSISTOR DTA143EU	
Q023	8-729-901-01	TRANSISTOR DTC144EK	
Q024	8-729-905-12	TRANSISTOR DTA144EU	
Q025	8-729-904-07	TRANSISTOR FMG2	
Q203	8-729-805-25	TRANSISTOR 2SB1121	
Q204	8-729-805-25	TRANSISTOR 2SB1121	
Q216	8-729-901-06	TRANSISTOR DTA144EK	
Q217	8-729-904-07	TRANSISTOR FMG2	
Q218	8-729-602-36	TRANSISTOR 2SA1602	
Q219	8-729-904-07	TRANSISTOR FMG2	
Q302	8-729-117-54	TRANSISTOR 2SA1175	
Q303	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

R001	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R002	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R003	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R004	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R006	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R007	1-216-041-00	METAL GLAZE	470	5%	1/10W
R008	1-216-041-00	METAL GLAZE	470	5%	1/10W
R009	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R010	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R011	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R012	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R013	△ 1-216-170-91	METAL GLAZE	68	5%	1/8W
R014	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R015	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R016	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R017	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R018	△ 1-216-033-91	METAL GLAZE	220	5%	1/10W
R019	△ 1-216-033-91	METAL GLAZE	220	5%	1/10W
R020	1-216-172-00	METAL GLAZE	82	5%	1/8W
R024	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R025	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R026	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R027	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R029	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R030	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R031	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R032	1-216-296-00	METAL GLAZE	0	5%	1/8W
R033	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R034	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R035	1-216-107-00	METAL GLAZE	270K	5%	1/10W
R036	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R037	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R039	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R040	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R041	1-216-009-00	METAL GLAZE	22	5%	1/10W
R042	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W

When indicating parts by reference number, please include the board name.

R043	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R045	1-216-043-00	METAL GLAZE	560	5%	1/10W
R046	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R047	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R048	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R049	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R050	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R051	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R052	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R053	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R054	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R055	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R056	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R057	1-216-013-00	METAL GLAZE	33	5%	1/10W
R058	1-216-136-00	METAL GLAZE	2.7	5%	1/8W
R059	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R060	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R061	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R062	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R065	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R066	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R067	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R068	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R069	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R070	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R071	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R072	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R073	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R074	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R075	△ 1-216-170-91	METAL GLAZE	68	5%	1/8W
R076	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R077	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R078	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R079	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R080	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R081	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R082	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R083	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R084	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R085	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R086	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R087	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R089	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R090	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R201	1-216-041-00	METAL GLAZE	470	5%	1/10W
R202	1-216-041-00	METAL GLAZE	470	5%	1/10W
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R211	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R212	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R213	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R214	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R215	1-216-047-00	METAL GLAZE	820	5%	1/10W
R216	1-216-025-00	METAL GLAZE	100	5%	1/10W
R217	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R218	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R219	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R220	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R221	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R222	1-216-302-00	METAL GLAZE	2.7	5%	1/10W
R223	1-216-302-00	METAL GLAZE	2.7	5%	1/10W
R224	1-216-302-00	METAL GLAZE	2.7	5%	1/10W
R225	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R226	1-214-972-00	METAL	0.22	1%	1/4W
R227	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R228	1-216-037-00	METAL GLAZE	330	5%	1/10W

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark		
R229	1-216-041-00	METAL GLAZE	470	5%	1/10W
R230	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R301	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R302	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R304	1-216-009-00	METAL GLAZE	22	5%	1/10W
R305	1-216-043-00	METAL GLAZE	560	5%	1/10W
R306	1-216-037-00	METAL GLAZE	330	5%	1/10W
R307	1-216-041-00	METAL GLAZE	470	5%	1/10W
R308	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R309	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R310	1-216-296-00	METAL GLAZE	0	5%	1/8W
R311	1-216-296-00	METAL GLAZE	0	5%	1/8W

TESTPOINT

TP002	*1-535-622-11	PIN, TERMINAL
TP004	*1-535-622-11	PIN, TERMINAL
TP005	*1-535-622-11	PIN, TERMINAL
TP006	*1-535-622-11	PIN, TERMINAL
TP007	*1-535-622-11	PIN, TERMINAL
TP008	*1-535-622-11	PIN, TERMINAL
TP010	*1-535-622-11	PIN, TERMINAL

CRYSTAL

X001	1-567-885-11	VIBRATOR, CRYSTAL 12MHz
X002	1-567-884-11	OSCILLATOR, CERAMIC 700KHz

*A-7060-919-A VA-36 BOARD, COMPLETE

A-7068-091-A AU-32P, BOARD, COMPLETE (HIC)
 A-7068-092-A CC-10, BOARD, COMPLETE (HIC)
 A-7068-093-A YP-8, BOARD, COMPLETE (HIC)

CAPACITOR

C251	1-124-638-11	ELECT	22MF	20%	10V
C252	1-124-279-11	ELECT	3.3MF	20%	25V
C331	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C332	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C333	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C334	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V
C335	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C336	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C337	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C338	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C339	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V
C340	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C341	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C342	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C343	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V
C344	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C345	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C346	1-163-089-00	CERAMIC CHIP	6PF	0.25PF	50V
C347	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C348	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C349	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C350	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C351	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C352	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C353	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C354	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C355	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C356	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C357	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C359	1-124-442-00	ELECT	330MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C360	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C361	1-135-100-21	TANTAL CHIP	6.8MF	20% 6.3V
C362	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C363	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C364	1-163-035-00	CERAMIC CHIP	0.047MF	50V
C365	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C366	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C367	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C368	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C369	1-124-229-00	ELECT	33MF	20% 6.3V
C370	1-124-462-00	ELECT	10MF	20% 10V
C371	1-124-222-00	ELECT	22MF	20% 6.3V
C372	1-124-222-00	ELECT	22MF	20% 6.3V
C373	1-135-091-00	TANTAL CHIP	1MF	20% 16V
C374	1-135-091-00	TANTAL CHIP	1MF	20% 16V
C375	1-163-113-00	CERAMIC CHIP	68PF	5% 50V
C376	1-163-038-00	CERAMIC CHIP	0.1MF	25V
C377	1-163-099-00	CERAMIC CHIP	18PF	5% 50V
C380	1-135-100-21	TANTAL CHIP	6.8MF	20% 6.3V
C381	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C382	1-163-097-00	CERAMIC CHIP	15PF	5% 50V
C391	1-163-133-00	CERAMIC CHIP	470PF	5% 50V
C392	1-163-141-00	CERAMIC CHIP	0.001MF	5% 50V
C393	1-163-111-00	CERAMIC CHIP	56PF	5% 50V
C394	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C395	1-124-462-00	ELECT	10MF	20% 10V
C396	1-163-105-00	CERAMIC CHIP	33PF	5% 50V
C397	1-163-111-00	CERAMIC CHIP	56PF	5% 50V
C398	1-163-035-00	CERAMIC CHIP	0.047MF	50V
C399	1-163-095-00	CERAMIC CHIP	12PF	5% 50V
C400	1-163-097-00	CERAMIC CHIP	15PF	5% 50V
C404	1-163-109-00	CERAMIC CHIP	47PF	5% 50V
C405	1-163-117-00	CERAMIC CHIP	100PF	5% 50V
C406	1-135-100-21	TANTAL CHIP	6.8MF	20% 6.3V
C408	1-163-141-00	CERAMIC CHIP	0.001MF	10% 50V
C409	1-163-141-00	CERAMIC CHIP	0.001MF	10% 50V
C410	1-163-015-00	CERAMIC CHIP	0.0033MF	10% 50V
C411	1-163-109-00	CERAMIC CHIP	47PF	5% 50V
C412	1-163-021-00	CERAMIC CHIP	0.01MF	10% 50V
C413	1-163-113-00	CERAMIC CHIP	68PF	5% 50V
C414	1-163-113-00	CERAMIC CHIP	68PF	5% 50V
C415	1-163-129-00	CERAMIC CHIP	330PF	5% 50V
C416	1-163-117-00	CERAMIC CHIP	100PF	5% 50V
C490	1-163-141-00	CERAMIC CHIP	0.001MF	10% 50V
C491	1-163-021-00	CERAMIC CHIP	0.01MF	10% 50V
C492	1-163-021-00	CERAMIC CHIP	0.01MF	50V
C493	1-163-038-00	CERAMIC CHIP	0.1MF	25V
C494	1-163-105-00	CERAMIC CHIP	33PF	5% 50V
C496	1-124-225-00	ELECT	100MF	20% 6.3V
C497	1-124-225-00	ELECT	100MF	20% 6.3V
C501	1-124-224-00	ELECT	47MF	20% 6.3V
C502	1-163-019-00	CERAMIC CHIP	0.0068MF	10% 50V
C503	1-135-100-21	TANTAL CHIP	6.8MF	20% 6.3V
C504	1-124-225-00	ELECT	100MF	20% 6.3V
C505	1-124-225-00	ELECT	100MF	20% 6.3V
C507	1-135-096-21	TANTAL CHIP	4.7MF	20% 10V
C508	1-124-222-00	ELECT	22MF	20% 6.3V
C510	1-135-099-00	TANTAL CHIP	2.2MF	20% 6.3V
C511	1-124-225-00	ELECT	100MF	20% 6.3V
C512	1-124-229-00	ELECT	33MF	20% 6.3V
C513	1-135-083-00	TANTAL CHIP	0.47MF	20% 25V
C514	1-163-141-00	CERAMIC CHIP	0.001MF	10% 50V

CONNECTOR

CN001 *1-566-098-11 PIN, BOARD TO BOARD 14P

Ref.No	Part No.	Description	Remark
CN002	*1-566-091-11	PIN, BOARD TO BOARD 6P	
CN004	*1-563-467-11	SOCKET, SMALL TYPE 5P	
CN332	*1-537-087-11	JACK BOARD	
CN333	*1-564-003-00	PIN, CONNECTOR 4P	
CN501	*1-564-001-11	PIN, CONNECTOR 2P	
CN502	*1-564-002-00	PIN, CONNECTOR 3P	
VARIABLE CAPACITOR			
CV331	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P	
CV332	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P	
CV333	1-141-311-11	CAP, VAR, TRIMMER (CHIP) 20P	
CV334	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P	
DIODE			
D331	8-719-106-71	DIODE RD12M-B2	
D332	8-719-106-71	DIODE RD12M-B2	
D333	8-719-105-91	DIODE RD5.6M-B1	
D334	8-719-105-45	DIODE RD3.3M-B1	
D335	8-719-101-23	DIODE 1SS123	
D336	8-719-105-45	DIODE RD3.3M-B1	
D338	8-719-100-05	DIODE 1S2837	
D339	8-719-106-43	DIODE RD9.1M-B1	
D340	8-719-106-43	DIODE RD9.1M-B1	
D341	8-719-106-43	DIODE RD9.1M-B1	
D342	8-719-106-43	DIODE RD9.1M-B1	
D343	8-719-106-43	DIODE RD9.1M-B1	
D344	8-719-105-40	DIODE RD3.0M-B2	
D501	8-719-106-71	DIODE RD12M-B2	
DELAY LINE			
DL331	1-415-517-21	DELAY LINE, DUAL 1H-2H	
FILTER			
FL251	1-235-612-21	BPF	
FL252	1-235-611-21	BPF	
FL331	1-409-394-11	TRAP, CHROMA EMPHASIS	
FL332	1-235-632-11	BPF	
FL333	1-235-633-11	BPF	
FL501	1-235-398-11	BPF	
IC			
IC331	8-759-745-64	IC NJM4560M	
IC332	8-759-204-51	IC TC40H008F	
IC333	8-759-112-72	IC UPD6142G-101	
COIL			
L331	1-410-389-11	INDUCTOR CHIP 47UH	
L332	1-410-377-11	INDUCTOR CHIP 4.7UH	
L333	1-408-795-21	INDUCTOR CHIP 330UH	
L334	1-410-167-41	INDUCTOR CHIP 820UH	
L335	1-410-657-21	INDUCTOR CHIP 180UH	
L336	1-408-783-00	INDUCTOR CHIP 33UH	
L337	1-410-381-11	INDUCTOR CHIP 10UH	
L338	1-410-380-21	INDUCTOR CHIP 8.2UH	
L339	1-408-785-21	INDUCTOR CHIP 47UH	
L340	1-410-389-11	INDUCTOR CHIP 47UH	
L341	1-410-389-11	INDUCTOR CHIP 47UH	
L342	1-410-389-11	INDUCTOR CHIP 47UH	
L343	1-408-776-00	INDUCTOR CHIP 8.2UH	
L344	1-408-777-00	INDUCTOR CHIP 10UH	
L345	1-410-369-11	INDUCTOR CHIP 1UH	
L346	1-410-369-11	INDUCTOR CHIP 1UH	
L348	1-410-388-21	INDUCTOR CHIP 39UH	
L349	1-410-386-11	INDUCTOR CHIP 27UH	
L350	1-410-656-21	INDUCTOR CHIP 150UH	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L351	1-410-657-21	INDUCTOR CHIP 180UH	
L352	1-410-389-11	INDUCTOR CHIP 47UH	
L353	1-410-393-11	INDUCTOR CHIP 100UH	
L354	1-410-656-21	INDUCTOR CHIP 150UH	
L355	1-410-656-21	INDUCTOR CHIP 150UH	
L357	1-410-385-11	INDUCTOR CHIP 22UH	
L358	1-410-390-11	INDUCTOR CHIP 56UH	
L361	1-408-796-41	INDUCTOR CHIP 390UH	
L363	1-410-381-11	INDUCTOR CHIP 10UH	
COIL			
LV331	1-404-594-11	COIL, VARIABLE 10UH	
TRANSISTOR			
Q251	8-729-109-42	TRANSISTOR 2SK94-X2	
Q252	8-729-905-15	TRANSISTOR DTC144WU	
Q331	8-729-602-21	TRANSISTOR 2SC4154	
Q332	8-729-602-21	TRANSISTOR 2SC4154	
Q333	8-729-602-21	TRANSISTOR 2SC4154	
Q334	8-729-602-21	TRANSISTOR 2SC4154	
Q335	8-729-602-21	TRANSISTOR 2SC4154	
Q336	8-729-905-15	TRANSISTOR DTC144WU	
Q337	8-729-905-09	TRANSISTOR DTA144WU	
Q339	8-729-602-21	TRANSISTOR 2SC4154	
Q340	8-729-905-15	TRANSISTOR DTC144WU	
Q341	8-729-602-21	TRANSISTOR 2SC4154	
Q342	8-729-905-15	TRANSISTOR DTC144WU	
Q343	8-729-602-21	TRANSISTOR 2SC4154	
Q346	8-729-905-09	TRANSISTOR DTA144WU	
Q347	8-729-602-21	TRANSISTOR 2SC4154	
Q348	8-729-602-21	TRANSISTOR 2SC4154	
Q349	8-729-602-21	TRANSISTOR 2SC4154	
Q350	8-729-905-15	TRANSISTOR DTC144WU	
Q351	8-729-905-15	TRANSISTOR DTC144WU	
Q352	8-729-117-54	TRANSISTOR 2SA1175	
Q353	8-729-905-15	TRANSISTOR DTC144WU	
Q354	8-729-602-21	TRANSISTOR 2SC4154	
Q356	8-729-100-76	TRANSISTOR 2SA812	
Q357	8-729-100-66	TRANSISTOR 2SC1623	
Q358	8-729-905-15	TRANSISTOR DTC144WU	
Q359	8-729-602-21	TRANSISTOR 2SC4154	
Q361	8-729-602-36	TRANSISTOR 2SA1602	
Q362	8-729-602-21	TRANSISTOR 2SC4154	
Q363	8-729-905-15	TRANSISTOR DTC144WU	
Q364	8-729-905-15	TRANSISTOR DTC144WU	
Q366	8-729-602-21	TRANSISTOR 2SC4154	
Q367	8-729-905-15	TRANSISTOR DTC144WU	
Q368	8-729-602-21	TRANSISTOR 2SC4154	
Q369	8-729-101-07	TRANSISTOR 2SB798	
Q370	8-729-602-36	TRANSISTOR 2SA1602	
Q371	8-729-602-36	TRANSISTOR 2SA1602	
Q373	8-729-602-36	TRANSISTOR 2SA1602	
Q375	8-729-903-10	TRANSISTOR FMW1	
Q376	8-729-905-09	TRANSISTOR DTA144WU	
Q377	8-729-602-21	TRANSISTOR 2SC4154	
Q378	8-729-602-21	TRANSISTOR 2SC4154	
Q379	8-729-602-36	TRANSISTOR 2SA1602	
RESISTOR			
R251	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R252	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R253	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R254	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R255	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R331	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	

Ref.No	Part No.	Description	Remark			
R332	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R334	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R335	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R340	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R341	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R342	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R343	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R344	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R345	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R346	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R347	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R348	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R350	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R351	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R352	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R353	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R354	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R355	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R356	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R357	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R358	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R360	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R361	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R362	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R363	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R364	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R365	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R366	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R367	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R368	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R369	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R370	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R371	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R372	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R373	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R375	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R376	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R378	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R379	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R380	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R381	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R382	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R383	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R384	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R385	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R386	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R387	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R388	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R389	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R390	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R391	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R392	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R393	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R394	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R395	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R396	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R397	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R398	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R399	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R400	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R401	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R402	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R403	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R404	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R405	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	

Ref.No	Part No.	Description	Remark			
R406	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R407	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R409	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R410	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R411	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R412	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R413	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R414	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R415	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R416	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R417	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R418	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R422	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R424	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R425	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R426	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R428	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R429	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R442	1-249-417-11	CARBON	1K	5%	1/4W	
R443	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R444	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R445	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R446	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R447	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R448	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R449	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R450	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R451	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R452	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R453	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R454	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R455	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R456	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R457	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R458	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R459	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R460	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R461	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R462	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R463	1-216-138-00	METAL GLAZE	3.3	5%	1/8W	
R465	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R466	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R467	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R468	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R469	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R470	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R471	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R472	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R475	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R476	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R477	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R478	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R479	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R480	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R481	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R482	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R483	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R484	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R485	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R487	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R488	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R489	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R490	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R491	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R492	1-216-089-00	METAL GLAZE	47K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark		
R493	1-216-033-00	METAL GLAZE	220	5%	1/10W
R494	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R507	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R514	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R515	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R516	1-216-003-11	METAL GLAZE	12	5%	1/10W
R517	1-216-073-00	METAL GLAZE	10K	5%	1/10W

VARIABLE RESISTOR

RV251	1-230-873-11	RES, ADJ, METAL GLAZE	47K		
RV331	1-230-867-11	RES, ADJ, METAL GLAZE	1K		
RV332	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K		
RV333	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K		
RV334	1-230-871-11	RES, ADJ, METAL GLAZE	22K		

THERMISTOR

TH331	1-800-200-00	THERMISTOR			
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TESTPOINT

TP331	*1-535-622-11	PIN, TERMINAL			
TP332	*1-535-622-11	PIN, TERMINAL			

CRYSTAL

X331	1-567-347-11	OSCILLATOR, CERAMIC			
X332	1-567-504-11	OSCILLATOR, CRYSTAL			
X333	1-567-699-21	VIBRATOR, CRYSTAL			

A-7060-693-A FP-53 FLEXIBLE BOARD, COMPLETE

3-713-904-01 HOLDER (2), LED

DIODE

D302	8-719-940-81	DIODE GL452S			
D303	8-719-801-55	TLP907-O			
D304	8-719-801-55	TLP907-O			

SWITCH

S301	1-570-869-11	SWITCH, PUSH (2 KEY) TAPE SELECT/REC PROOF			
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*A-7060-926-A VC-24P BOARD, COMPLETE

A-7068-094-A CP-19P BOARD, COMPLETE (HIC)

*3-718-261-01 HOLDER, WB SENSOR

CAPACITOR

C701	1-162-637-11	CERAMIC CHIP	0.47MF		16V
C702	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C703	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C704	1-135-083-00	TANTAL CHIP	0.47MF	20%	25V
C705	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C706	1-126-204-11	ELECT	47MF	20%	16V
C707	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C708	1-126-204-11	ELECT	47MF	20%	16V
C709	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C710	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C711	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C712	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C713	1-126-206-11	ELECT	100MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark		
C714	1-126-206-11	ELECT	100MF	20%	6.3V
C715	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C716	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C717	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C718	1-135-096-21	TANTAL CHIP	4.7MF	20%	10V
C719	1-162-638-11	CERAMIC CHIP	1MF		16V
C721	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C723	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C724	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C725	1-135-096-21	TANTAL CHIP	4.7MF	20%	10V
C726	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C727	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C728	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C729	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C730	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C732	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C733	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C734	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C735	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C736	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C737	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C738	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C741	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C742	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C743	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C744	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C745	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C746	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C747	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C749	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C751	1-135-101-21	TANTAL CHIP	22MF	20%	6.3V
C754	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C755	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C808	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C809	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C810	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C811	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C812	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C813	1-135-096-21	TANTAL CHIP	4.7MF	20%	10V
C814	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C815	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C817	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C818	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C819	1-135-091-00	TANTAL CHIP	1MF	20%	16V
C820	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C821	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C822	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C823	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C824	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C825	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C828	1-124-566-11	ELECT	120MF	20%	6.3V
C829	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C851	1-130-467-00	MYLAR	470PF	5%	50V
C852	1-130-481-00	MYLAR	0.0068MF	5%	50V
C853	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V
C854	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C855	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V
C856	1-162-638-11	CERAMIC CHIP	1MF		16V
C857	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C858	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C859	1-126-208-11	ELECT	47MF	20%	4V
C860	1-126-208-11	ELECT	47MF	20%	4V

CONNECTOR

CN701	*1-564-014-00	PIN, CONNECTOR 4P			
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Ref.No	Part No.	Description	Remark
CN702	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
CN703	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
CN801	*1-564-012-00	PIN, CONNECTOR 2P	

DIODE

D701	8-719-100-05	DIODE 1S2837	
D801	8-719-100-03	DIODE 1S2835	
D851	8-719-100-05	DIODE 1S2837	

DELAY LINE

DL801	1-415-448-21	DELAY LINE	
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IC

IC701	8-759-100-94	IC UPC358G2	
IC702	8-752-031-96	IC CXA1070Q	
IC703	8-759-106-47	IC UPD4538BG	
IC704	8-759-106-47	IC UPD4538BG	
IC801	8-752-032-92	IC CXA1072Q	
IC851	8-759-939-68	IC TL062ACPS	
IC852	8-759-100-93	IC UPC393G2	
IC853	8-759-106-23	IC UPD4066BG	
IC854	8-759-012-75	IC MC146805F2FPSC82533F	

COIL

L701	1-421-904-21	COIL, CHOKE 47UH	
L702	1-410-371-21	INDUCTOR CHIP 1.5UH	
L704	1-410-371-21	INDUCTOR CHIP 1.5UH	
L801	1-410-393-11	INDUCTOR CHIP 100UH	

TRANSISTOR

Q701	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q702	8-729-100-75	TRANSISTOR 2SA812-M5	
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q704	8-729-100-76	TRANSISTOR 2SA812	
Q705	8-729-100-76	TRANSISTOR 2SA812	
Q706	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q707	8-729-100-76	TRANSISTOR 2SA812	
Q708	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q709	8-729-100-76	TRANSISTOR 2SA812	
Q712	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q713	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q714	8-729-100-76	TRANSISTOR 2SA812	
Q715	8-729-100-76	TRANSISTOR 2SA812	
Q716	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q781	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q801	8-729-100-76	TRANSISTOR 2SA812	
Q802	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q851	8-729-903-30	TRANSISTOR DTC144TK	
Q852	8-729-903-30	TRANSISTOR DTC144TK	
Q853	8-729-904-20	TRANSISTOR FMA2	
Q854	8-729-904-20	TRANSISTOR FMA2	
Q857	8-729-901-06	TRANSISTOR DTA144EK	
Q858	8-729-904-07	TRANSISTOR FMG2	
Q859	8-729-904-07	TRANSISTOR FMG2	
Q862	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

R701	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R702	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R703	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R704	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R705	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R706	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R707	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R708	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R709	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R710	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R711	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R712	1-216-665-11	METAL CHIP	3.9K 0.50% 1/10W
R713	1-216-663-11	METAL CHIP	3.3K 0.50% 1/10W
R714	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R715	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R716	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R717	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R718	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R719	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R720	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R721	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R722	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R723	1-216-045-00	METAL GLAZE	680 5% 1/10W
R724	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R725	1-216-045-00	METAL GLAZE	680 5% 1/10W
R726	1-216-295-00	METAL GLAZE	0 5% 1/10W
R727	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R728	1-216-047-00	METAL GLAZE	820 5% 1/10W
R729	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R731	1-216-683-11	METAL CHIP	22K 0.50% 1/10W
R732	1-216-689-11	METAL CHIP	39K 0.50% 1/10W
R733	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R734	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R735	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R736	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R741	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R742	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R743	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R744	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R745	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R746	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R748	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R749	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R750	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R751	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R754	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R755	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R756	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R757	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R758	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R759	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R760	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R761	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R762	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R763	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R764	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R767	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R768	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R769	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R770	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R771	1-216-119-00	METAL GLAZE	820K 5% 1/10W
R772	1-216-695-00	METAL CHIP	68K 0.5% 1/10W
R773	1-216-697-00	METAL CHIP	82K 0.5% 1/10W
R774	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R775	1-216-037-00	METAL GLAZE	330 5% 1/10W
R776	1-216-295-00	METAL GLAZE	0 5% 1/10W
R778	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R779	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R781	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R801	1-216-134-00	METAL GLAZE	2.2 5% 1/8W
R806	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R807	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R808	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R809	1-216-083-00	METAL GLAZE	27K 5% 1/10W

VC-24P

VC-23P

DT-62P

Ref.No	Part No.	Description	Remark		
R810	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R811	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R812	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R813	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R816	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R817	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R818	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R819	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R820	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R821	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R823	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R825	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R826	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R827	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R828	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R830	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R851	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R852	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R853	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R854	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R855	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R856	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R857	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R858	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R859	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R860	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R861	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R862	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R863	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R864	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R865	1-216-115-00	METAL GLAZE	560K	5%	1/10W
R866	1-216-107-00	METAL GLAZE	270K	5%	1/10W
R867	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R868	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R869	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R870	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R871	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R872	1-216-107-00	METAL GLAZE	270K	5%	1/10W
R873	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R874	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R875	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R876	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R877	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R878	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R879	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R880	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R881	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R882	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R883	1-249-425-11	CARBON	4.7K	5%	1/4W
R885	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R886	1-216-073-00	METAL GLAZE	10K	5%	1/10W
VARIABLE RESISTOR					
RV701	1-230-869-11	RES, ADJ, METAL GLAZE	4.7K		
RV702	1-230-869-11	RES, ADJ, METAL GLAZE	4.7K		
RV704	1-230-873-11	RES, ADJ, METAL GLAZE	47K		
RV801	1-230-873-11	RES, ADJ, METAL GLAZE	47K		
RV802	1-230-873-11	RES, ADJ, METAL GLAZE	47K		
RV803	1-230-873-11	RES, ADJ, METAL GLAZE	47K		
RV804	1-230-873-11	RES, ADJ, METAL GLAZE	47K		
RV805	1-230-871-11	RES, ADJ, METAL GLAZE	22K		
RV806	1-230-871-11	RES, ADJ, METAL GLAZE	22K		
RV807	1-230-873-11	RES, ADJ, METAL GLAZE	47K		
RV851	1-230-871-11	RES, ADJ, METAL GLAZE	22K		

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark		
SENSOR					
SB851	1-807-684-11	SENSOR, WHITE BALANCE			

*A-7060-925-A		VC-23P BOARD, COMPLETE	*****		
A-7068-082-A		DT-62P BOARD, COMPLETE (HIC)			
	1-622-942-11	PC BOARD, FP-54 FLEXIBLE			
	3-718-224-01	HOLDER (A), C PC BOARD			
	3-718-256-01	HOLDER (B), C PC BOARD			
	*3-719-692-01	PLATE (R), SHIELD, VC-23			
CAPACITOR					
C602	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C603	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C604	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C605	1-124-258-00	ELECT	3.3MF	20%	50V
C606	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C607	1-124-478-11	ELECT	100MF	20%	25V
C609	1-124-257-00	ELECT	2.2MF	20%	50V
C611	1-162-638-11	CERAMIC CHIP	1MF		16V
C612	1-124-224-00	ELECT	47MF	20%	6.3V
C618	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C619	1-124-584-00	ELECT	100MF	20%	10V
C620	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C621	1-124-242-00	ELECT	33MF	20%	25V
C622	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C623	1-124-247-00	ELECT	10MF	20%	25V
C624	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C625	1-124-584-00	ELECT	100MF	20%	10V
C626	1-124-225-00	ELECT	100MF	20%	6.3V
C627	1-124-225-00	ELECT	100MF	20%	6.3V
C628	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C629	1-124-258-00	ELECT	3.3MF	20%	50V
C630	1-124-247-00	ELECT	10MF	20%	35V
C631	1-124-247-00	ELECT	10MF	20%	35V
C632	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C634	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C635	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C636	1-124-258-00	ELECT	3.3MF	20%	35V
C652	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C654	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C655	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C656	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C658	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C659	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C660	1-162-638-11	CERAMIC CHIP	1MF		16V
C661	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C662	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C663	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C664	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C665	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C666	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C667	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C668	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C669	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C670	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C671	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
CONNECTOR					
CN601		*1-506-743-11	PIN, CONNECTOR 5P		

Ref.No	Part No.	Description	Remark			
<u>TRIMMER</u>						
CT651	1-141-347-11	CAP, VAR, TRIMMER (CHIP) 10P				
CT652	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P				
<u>DIODE</u>						
D602	8-719-100-05	DIODE 1S2837				
D603	8-719-100-03	DIODE 1S2835				
D604	8-719-100-03	DIODE 1S2835				
D605	8-719-100-03	DIODE 1S2835				
D651	8-713-220-00	DIODE 1T32-2				
<u>IC</u>						
IC601	8-750-010-65	IC IU024AK-10A				
IC602	8-752-324-14	IC CXD1141M				
IC651	8-752-321-16	IC CXD1030M				
<u>COIL</u>						
L601	1-421-904-21	COIL, CHOKE 47UH				
L608	1-421-904-21	COIL, CHOKE 47UH				
L609	1-410-393-11	INDUCTOR CHIP 100UH				
L651	1-410-389-11	INDUCTOR CHIP 47UH				
<u>TRANSISTOR</u>						
Q601	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q602	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q603	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q604	8-729-105-53	TRANSISTOR 2SK300				
Q605	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q606	8-729-100-76	TRANSISTOR 2SA812				
Q607	8-729-101-07	TRANSISTOR 2SB798				
Q608	8-729-103-72	TRANSISTOR 2SD1005				
Q651	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q652	8-729-175-73	TRANSISTOR 2SC2757				
Q653	8-729-175-72	TRANSISTOR 2SC2757-T33				
<u>RESISTOR</u>						
R601	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R602	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R603	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R604	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R605	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R606	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R607	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R608	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R609	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R610	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R611	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R612	1-216-308-00	METAL GLAZE	4.7	5%	1/10W	
R613	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R614	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R615	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R616	1-216-154-00	METAL GLAZE	15	5%	1/8W	
R617	1-216-154-00	METAL GLAZE	15	5%	1/8W	
R618	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R620	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R651	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R652	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R654	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R655	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R656	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R657	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R658	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R660	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R661	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R662	1-216-093-00	METAL GLAZE	68K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark			
R663	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R664	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R665	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R667	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R668	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R669	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R670	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R671	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R672	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R673	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R674	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R675	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R677	1-216-121-00	METAL GLAZE	1M	5%	1/10W	

VARIABLE RESISTOR

RV601 1-230-873-11 RES, ADJ, METAL GLAZE 47K

CRYSTAL

X651 1-567-733-11 VIBRATOR, CRYSTAL 17.7MHz
 X652 1-567-732-12 VIBRATOR, CRYSTAL 28.3750MHz

*A-7085-010-A VF-9P BOARD, COMPLETE

(Include LD-8P BOARD)

1-526-978-11 SOCKET, ASSY CRT

CAPACITOR

C901	1-162-638-11	CERAMIC CHIP	1MF		16V
C902	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C903	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C904	1-124-444-00	ELECT	220MF	20%	6.3V
C905	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C906	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C907	1-130-481-11	MYLAR	0.0068MF	5%	50V
C908	1-163-019-91	CERAMIC CHIP	0.0068MF	10%	50V
C909	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C910	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C911	1-124-255-00	ELECT	1MF	20%	50V
C912	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C913	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C915	1-136-175-00	FILM	0.68MF	5%	50V
C916	1-124-224-00	ELECT	47MF	20%	6.3V
C917	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C918	1-124-462-00	ELECT	10MF	20%	16V
C919	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C920	1-124-444-00	ELECT	220MF	20%	6.3V
C921	1-124-638-11	ELECT	22MF	20%	6.3V
C922	1-162-993-11	CERAMIC CHIP	0.22MF	10%	16V
C923	1-131-388-00	TANTALUM	68MF	10%	3.15V

CONNECTOR

CN901 *1-564-001-11 PIN, CONNECTOR 2P
 CN902 *1-564-001-11 PIN, CONNECTOR 2P

COMBINATION PARTS

CP901 1-237-730-11 RES, ADJ 470/2.2K/2.2K/1M

DIODE

D901 8-719-101-23 DIODE 1SS123
 D902 8-719-801-26 DIODE TLR223
 D903 8-719-100-03 DIODE 1S2835

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
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IC

IC901	8-759-403-49	IC AN2510S	
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COIL

L901	△1-408-980-41	MICRO INDUCTOR 68UH	
L902	1-408-775-21	INDUCTOR CHIP 6.8UH	
L903	△1-459-747-21	COIL, FERRITE (HLC)	

IC LINK

PS901	△1-532-933-11	LINK, IC 0.25A	
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TRANSISTOR

Q901	△8-729-900-99	TRANSISTOR DTA144WK	
Q902	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q903	8-729-106-64	TRANSISTOR 2SD1615	
Q904	8-729-216-32	TRANSISTOR 2SA1163G	

RESISTOR

R901	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R902	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R903	1-216-041-00	METAL GLAZE	470	5%	1/10W
R905	△1-216-073-91	METAL GLAZE	10K	5%	1/10W
R906	△1-216-051-91	METAL GLAZE	1.2K	5%	1/10W

R907	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R908	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R909	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R910	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W
R911	1-216-133-00	METAL GLAZE	3.3M	5%	1/10W

R912	1-216-133-00	METAL GLAZE	3.3M	5%	1/10W
R913	1-216-128-11	METAL GLAZE	2M	5%	1/10W
R914	1-216-019-00	METAL GLAZE	56	5%	1/10W
R915	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W
R916	1-216-093-00	METAL GLAZE	68K	5%	1/10W

R917	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R918	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R919	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R920	1-216-306-11	METAL GLAZE	3.9	5%	1/10W
R921	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W

R922	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R923	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R924	1-216-295-00	METAL GLAZE	0	5%	1/10W
R928	1-216-045-00	METAL GLAZE	680	5%	1/10W
R929	1-216-047-00	METAL GLAZE	820	5%	1/10W

R930	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R931	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R932	1-216-025-00	METAL GLAZE	100	5%	1/10W

VARIABLE RESISTOR

RV901	1-230-203-00	RES, ADJ, METAL GLAZE 2.2M	
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TRANSFORMER

T901	△1-439-414-11	TRANSFORMER ASSY, FLYBACK	
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THERMISTOR

TH901	1-807-938-11	THERMISTOR (500)	
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Ref.No	Part No.	Description	Remark
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*1-622-923-22	LD-8P BOARD	*****	
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DIODE

D904	8-719-404-19	DIODE LN1251C	
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*A-7060-930-A	FD-4P BOARD, COMPLETE	*****	
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CAPACITOR

C151	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C152	1-162-638-11	CERAMIC CHIP	1MF		16V
C153	1-162-638-11	CERAMIC CHIP	1MF		16V
C154	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C155	1-163-101-00	CERAMIC CHIP	22PF	5%	50V

C156	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C157	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C158	1-162-638-11	CERAMIC CHIP	1MF		16V
C159	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C160	1-163-038-00	CERAMIC CHIP	0.1MF		25V

C161	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C165	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C166	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V
C167	1-135-100-21	TANTAL CHIP	6.8MF	20%	6.3V

CONNECTOR

CN151	*1-566-533-11	CONNECTOR, FPC (ZIF) 17P	
CN152	*1-564-001-11	PIN, CONNECTOR 2P	

TRIMMER

CT151	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30P	
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DIODE

D151	8-719-404-12	DIODE MA159	
D152	8-719-404-12	DIODE MA159	
D153	△8-719-105-73	DIODE RD4.7M-B2	
D154	8-719-105-99	DIODE RD6.2M-B1	

IC

IC151	8-759-140-70	IC UPD7503G-714-12	
IC152	8-759-937-56	IC S-8054ALB-LM	

INDICATOR TUBE

ND151	1-808-002-21	DISPLAY PANEL, LIQUID CRYSTAL	
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TRANSISTOR

Q151	8-729-602-21	TRANSISTOR 2SC4154	
Q152	△8-729-602-36	TRANSISTOR 2SA1602	
Q153	8-729-109-43	TRANSISTOR 2SK94-X3	
Q154	8-729-903-97	TRANSISTOR FMS1FE	
Q155	8-729-602-21	TRANSISTOR 2SC4154	

Q156	8-729-602-36	TRANSISTOR 2SA1602	
Q157	8-729-602-36	TRANSISTOR 2SA1602	
Q158	8-729-602-36	TRANSISTOR 2SA1602	
Q159	8-729-602-36	TRANSISTOR 2SA1602	
Q160	8-729-602-36	TRANSISTOR 2SA1602	

Q162	8-729-905-12	TRANSISTOR DTA144EU	
Q163	8-729-901-03	TRANSISTOR DTC144WK	

When indicating parts by reference number, please include the board name.

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
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RESISTOR

R148	1-216-025-00	METAL GLAZE	100	5%	1/10W
R149	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R150	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R151	1-216-045-00	METAL GLAZE	680	5%	1/10W
R152	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R153	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R155	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R156	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R157	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R158	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R159	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R160	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R161	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R162	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R163	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R164	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R165	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R166	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R167	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R168	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R169	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R170	Δ 1-216-097-91	METAL GLAZE	100K	5%	1/10W
R171	Δ 1-216-093-91	METAL GLAZE	68K	5%	1/10W
R172	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R173	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W
R174	1-216-115-00	METAL GLAZE	560K	5%	1/10W
R175	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R176	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R177	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R178	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R179	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R180	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R181	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R182	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R183	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R184	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R185	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R186	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R187	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R188	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R189	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R190	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R191	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R192	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R193	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R194	1-216-045-00	METAL GLAZE	680	5%	1/10W
R195	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R196	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R197	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R198	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R199	1-216-097-00	METAL GLAZE	100K	5%	1/10W

VARIABLE RESISTOR

RV151	1-237-776-11	RES, VAR, CARBON 10K
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SWITCH

S151	1-570-870-11	SWITCH, SLIDE	AUTO LOCK
S152	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	SHUTTER
S153	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	ZERO MEM
S154	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	FADER
S155	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	EDIT SERCH-
S156	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	
S157	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	RESET

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
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S158	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	WHITE BAL
S159	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	EDIT SERCH+
S160	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	DATA SET
S161	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	SELECT
S162	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	FOCUS

TESTPOINT

TP151	*1-535-622-11	PIN, TERMINAL
TP152	*1-535-622-11	PIN, TERMINAL
TP155	*1-535-622-11	PIN, TERMINAL
TP156	*1-535-622-11	PIN, TERMINAL

CRYSTAL

X151	1-527-997-21	VIBRATOR, CRYSTAL 32,768KHz
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*1-622-927-21 FK-4P BOARD

CONNECTOR

CN153	*1-563-586-11	CONNECTOR, FLEXIBLE 9P
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SWITCH

S163	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	▶▶
S164	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	■
S165	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	▷
S166	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	FF ▶▶
S167	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	■
S168	1-571-102-11	SWITCH, SLIDE REC	●
S169	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)	REW ◀◀
S170	1-571-102-11	SWITCH, SLIDE EJECT	
S171	1-571-101-11	SWITCH, SLIDE CAM, OFF, VTR	

TESTPOINT

TP157	*1-535-622-11	PIN, TERMINAL
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*A-7060-937-A SW-40P BOARD, COMPLETE

CAPACITOR

C951	1-123-321-00	ELECT	220MF	20%	16V
C952	1-135-104-00	TANTAL CHIP	10MF	20%	4V
C953	1-163-141-00	CERAMIC CHIP	0.001MF		50V

CONNECTOR

CN951	*1-564-005-00	PIN, CONNECTOR 6P
CN952	*1-564-002-00	PIN, CONNECTOR 3P
CN953	*1-564-001-11	PIN, CONNECTOR 2P
CN954	*1-564-001-11	PIN, CONNECTOR 2P

COIL

L951	1-410-337-11	MICRO INDUCTOR 1UH
L952	1-410-337-11	MICRO INDUCTOR 1UH
L953	1-410-369-11	INDUCTOR CHIP 1UH

TRANSISTOR

Q951	8-729-903-10	TRANSISTOR FMW1
Q952	8-729-805-25	TRANSISTOR 2SB1121
Q953	8-729-162-44	TRANSISTOR 2SB624

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>		
<u>RESISTOR</u>					
R951	1-216-334-11	METAL GLAZE 22K	1%	1/10W	
R952	1-216-336-11	METAL GLAZE 47K	1%	1/10W	
R953	1-216-045-00	METAL GLAZE 680	5%	1/10W	
R954	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R955	1-216-334-11	METAL GLAZE 22K	1%	1/10W	
R956	1-216-336-11	METAL GLAZE 47K	1%	1/10W	
R957	1-216-067-00	METAL GLAZE 5.6K	5%	1/10W	
R958	1-216-071-00	METAL GLAZE 8.2K	5%	1/10W	
R959	1-216-158-00	METAL GLAZE 22	5%	1/8W	

SWITCH

S951	1-570-689-11	SWITCH, KEY BOARD START/STOP			
S952	1-553-977-00	SWITCH, SLIDE STANDBY-LOCK			

*A-7060-938-A MC-17P BOARD, COMPLETE

CAPACITOR

C516	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C517	1-162-993-11	CERAMIC CHIP	0.22MF	10%	16V
C518	1-162-993-11	CERAMIC CHIP	0.22MF	10%	16V
C521	1-124-638-11	ELECT	22MF	20%	6.3V
C522	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C523	1-135-099-00	TANTAL CHIP	2.2MF	20%	6.3V
C524	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C526	1-124-224-00	ELECT	47MF	20%	6.3V
C529	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C530	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C531	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V

CONNECTOR

CN516 *1-564-012-00 PIN, CONNECTOR 2P

IC

IC516 8-759-111-56 IC UPC4572G2

JACK

J516	1-507-921-00	JACK MIC PLUG IN POWER			
J517	1-563-454-11	JACK, MINIATURE DC OUT			
J518	1-507-921-00	JACK EARPIECE			

COIL

L516	1-410-369-11	INDUCTOR CHIP 1UH			
L517	1-410-369-11	INDUCTOR CHIP 1UH			
L518	1-410-369-11	INDUCTOR CHIP 1UH			
L519	1-410-192-51	INDUCTOR CHIP 1UH			
L520	1-410-192-51	INDUCTOR CHIP 1UH			
L521	1-410-192-51	INDUCTOR CHIP 1UH			

RESISTOR

R516	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W	
R517	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W	
R518	1-216-067-00	METAL GLAZE 5.6K	5%	1/10W	
R519	1-216-091-00	METAL GLAZE 56K	5%	1/10W	
R520	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	
R521	1-216-103-00	METAL GLAZE 180K	5%	1/10W	
R522	1-216-025-00	METAL GLAZE 100	5%	1/10W	
R523	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R524	1-216-093-00	METAL GLAZE 68K	5%	1/10W	
R525	1-216-296-00	METAL GLAZE 0	5%	1/8W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark		
R526	1-216-049-00	METAL GLAZE 1K	5%	1/10W	

*A-7060-961-A AF-32 BOARD, COMPLETE

CAPACITOR

C001	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C002	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C003	1-124-464-11	ELECT	0.22MF	20%	50V
C004	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C005	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C006	1-124-234-00	ELECT	22MF	20%	16V
C007	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C008	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C009	1-124-026-00	ELECT(BLOCK)	3300MF		35V
C010	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

CONNECTOR

CN001	1-563-587-11	CONNECTOR, FLEXIBLE 10P			
CN002	1-563-608-11	CONNECTOR, FLEXIBLE 5P			
CN003	1-563-936-11	PIN, CONNECTOR 2P			
CN004	1-563-937-11	PIN, CONNECTOR 3P			

IC

IC001	9-909-857-01	IC HIM21			
IC002	9-992-551-01	IC 8DC49AV-6691			
IC003	9-909-855-01	IC LAG648			

TRANSISTOR

Q001	8-729-103-16	TRANSISTOR 2SC1622A-D17			
Q002	8-729-104-26	TRANSISTOR 2SB804-AW			

RESISTOR

R001	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R002	1-216-295-00	METAL GLAZE 0	5%	1/10W	
R003	1-216-096-00	METAL GLAZE 91K	5%	1/10W	
R004	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R005	1-216-082-00	METAL GLAZE 24K	5%	1/10W	
R006	1-216-075-00	METAL GLAZE 12K	5%	1/10W	
R007	1-216-046-00	METAL GLAZE 750	5%	1/10W	
R008	1-216-046-00	METAL GLAZE 750	5%	1/10W	
R009	1-216-080-00	METAL GLAZE 20K	5%	1/10W	
R010	1-216-041-00	METAL GLAZE 470	5%	1/10W	
R011	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W	
R012	1-216-085-00	METAL GLAZE 33K	5%	1/10W	
R013	1-216-304-11	METAL GLAZE 3.3	5%	1/10W	
R014	1-216-046-00	METAL GLAZE 750	5%	1/10W	
R015	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R016	1-216-045-00	METAL GLAZE 680	5%	1/10W	
R017	1-216-053-00	METAL GLAZE 1.5K	5%	1/10W	

VARIABLE RESISTOR

VR001	1-230-287-00	RES, ADJ, METAL GLAZE 10K			
VR002	1-237-485-11	RES, ADJ, METAL FILM 220K			
VR003	1-237-529-11	RES, ADJ, METAL FILM 1K			

CRYSTAL

X001 1-567-470-11 VIBRATOR, CERAMIC

Ref.No	Part No.	Description	Remark
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1-622-938-23	FP-70P FLEXIBLE BOARD		

1-535-658-21	TERMINAL BOARD		
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IC LINK

PS951	1-532-841-21	LINK, IC PRF1600 1.6A	
PS952	1-532-841-21	LINK, IC PRF1600 1.6A	

MISCELLANEOUS

1-464-815-11	CONVERTER UNIT, DC-DC		
1-535-574-11	TERMINAL, SHAFT GROUND		
1-542-089-11	MICROPHONE, ELECTRET, CONDENSER		
1-547-242-11	LENS, ZOOM (VCL-1206VH)		
1-807-238-11	SENSOR, DEW CONDENSATION		

C901	1-161-051-00	CAP, CERAMIC 0.01MF X	
L901	1-451-310-11	DEFLECTION YOKE (B/W)	
M902	A-7040-135-A	MOTOR BLOCK ASSY(2), CAPSTAN	
M903	1-541-508-11	MOTOR, DC (LOADING)	
S901	1-571-100-11	SWTCH,,PUSH (ZOOM)	

S902	1-553-226-00	SWITCH, LEAF (CC DOWN)	
V901	1-546-065-21	CATHODE-RAY TUBE,B/W	

ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
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*3-718-220-01	CUSHION (UPPER)	
*3-718-221-01	CUSHION (LOWER)	
3-769-236-11	MANUAL, INSTRUCTION (ENGLISH)	
3-769-236-41	MANUAL, INSTRUCTION (FRENCH, GERMANY, DUTCH) AEP, E MODEL	
3-769-236-51	MANUAL, INSTRUCTION (SPANISH, SWEDISH, ITALIAN) AEP, E MODEL	
3-769-236-71	MANUAL, INSTRUCTION (ARABIC) E MODEL	
4-344-284-00	BAG, PROTECTION	

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.